

# Playing the game

Edge's guide to getting into the videogame industry

THE FUTURE OF INTERACTIVE ENTERTAINMENT  
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# Contents

Your essential guide to getting into the videogames arena

## History in the making

04

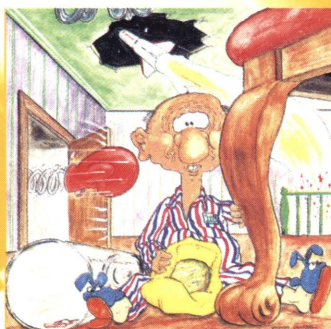
**W**hen **Edge** launched six years ago, this supplement would probably have been impossible. In 1993, videogames weren't even mentioned in the lecture halls of academia; the concept of degree courses specialising in the subject would have been unthinkable. Yes, the industry was developing, moving into new technologies, taking on more staff and spending more money, but it still lacked wider respect. Only a minority of school-leavers considered entering the 'profession', and those that did were usually labelled as computer geeks – people who had been tinkering with computers since they could walk.

Things change. Today the videogame industry is making more money than the western film industry, and is just as high-profile. The PlayStation, Game Boy and multimedia PC have brought the medium out of the shadows, videogames have become a concrete part of youth culture.

At the same time, the technology, marketing, and the games themselves are becoming more sophisticated. Development teams are evolving, finding new roles for ever more diverse skills. The terms 'programmer' and 'artist' are almost anachronisms: 3D modellers, animators, AI experts, mathematicians, 3D engine builders, graphic designers, etc, are the new currency, and with these new roles come new opportunities. The videogame industry is crying out for talent.

As with the music and film industries, however, it's not always clear – even for the most talented individuals – how to break in. Videogame jobs rarely get advertised in the local paper, and your nearest careers office probably won't be able to help. So **Edge** has consulted some of videogaming's most successful pundits, its burgeoning stars and its supporters in higher-education, to produce this all-encompassing guide.

The rest is up to you...



A whirlwind tour of the UK videogame industry, from the amateur days of *Pyjamarama* to the professional players of 1999

## Current affairs

08

Looking at the structure of the British games industry, from the mega-corps, publishers and break-offs to the biggest softco earners

## Inside the industry

10



Whether you're an aspiring programmer, musician or games retailer, you'll find some invaluable advice from industry insiders here

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### Colour reproduction

**Colourworks Repro**, Bristol  
**Phoenix Repro**, Bath

### Printing

**Cradley Print**, Warley,  
West Midlands  
**Edge** is printed on Royal Press  
90gsm

### Production of Edge

**Hardware** Power Macintosh, G3, PowerBook,  
Quadra by Apple  
**Software** QuarkXPress, Adobe Photoshop,  
Macromedia FreeHand,  
Pixer Typestry and Nisus Writer  
**Typography** (Adobe®)  
Format light/regular/medium/bold  
Vectora light/bold/black

### Acknowledgments

**Stuart Harrison** illustration  
**Telegraph Colour Library** cover image

### Subscriptions\*

**Future Publishing Ltd**  
FREEPOST B54900, Somerton  
Somerset TA11 7BR  
**Telephone Customer order line:**  
01458 271112  
**Fax:** 01225 822523  
**Email:** subs@futurenet.co.uk  
**Web:** www.futurenet.co.uk/edge/html

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## Rich and strange

18



Who doesn't want to be a 'videogame millionaire'? But for industry winners, hard work doesn't stop with success

## Apply yourself

20



Higher-education colleges are taking videogames seriously, and so should you. **Edge** considers the advantages of further study

## Study area

A list of gaming-related courses offered by nine British universities, detailing course components, entry requirements and contact details

## Code crackers

24



Hackers might be stereotyped as industry outlaws, but their skills as programmers make them desirable additions to a development team

## Special agents

26



As the videogame industry matures, so the demand for new talent is increasing. Employment agencies can help you get connected



# Birth of a nation

The road from hobbyist coding to a multimillion-pound industry hasn't been a smooth one. But passion, creativity and advancing technologies have transformed gaming into a respectable profession. **Edge** presents a brief history of UK videogame production, from the bedroom to the boardroom



## Born in a bedroom

In the beginning, the videogame industry was not a place for careers, it was a place for entrepreneurs and hobbyists. The latter wrote the games – usually alone in the inauspicious confines of their own homes – while the former set up as makeshift producers, duplicating and distributing the games and exploiting the young and enthusiastic coders.

Despite the dodgy financial situation, though, it is an era most of today's key developers remember fondly. **Dave Perry**, for example – who, aged 15, started off by writing books of BASIC game listings – recalls, "My first professional salary was at Mikro-Gen back in 1983. They paid me just £3,000 a year, which basically covered lunch and the train ride home. To be honest, my programming sucked then and I had tons to learn. My

first game was *Pyjamarama*, converted for the Amstrad CPC from the Sinclair Spectrum version. It got 10/10 in reviews and my salary shot up to £9,000. I could afford dinner and some new shoes!"

Andrew and **Phil Oliver**, who were major contributors to the early success

of Codemasters and now own Interactive Studios, had equally modest beginnings, as Phil explains: "The first game we got published was a Dragon 32 type-in program that appeared in *C&VG* in Dec '84. That earned an impressive £50. Next was *Gambit*, a game released through Acornsoft on the BBC, which won us first prize on ITV's 'Saturday Show' for the best game by under-16-year-olds. It was our first major break – Acornsoft paid us £200 and the 'Saturday Show' gave us a Commodore monitor, still used to this day!" Similarly, programmer Tony Crowther was offered the modest incentive of a Commodore 64 by Alligata software if he'd write them some games. Six projects later, a cheque for £1,000 dropped through the letterbox – much to the surprise of his mum.

Stories like this characterise the birth of the computer games market: a messy, corrupt, exploitative milieu. Perry explains: "It was a real mess. Terrible distribution, lots of ripping people off, lots of crappy product. That said, if you were on top of it and released good games, you could make money extremely fast, and that's what got things started so quickly." Indeed, for anyone who proved they had talent and/or business ingenuity, the early '80s were the videogame equivalent of the

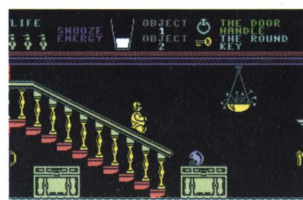
Klondike gold rush. "Selling games wasn't as hard as it is today," opines

**Steve Bailey**, who has been with Gremlin since the very beginning and now goes by the title 'operations director'. "Everyone wanted to buy everything, so getting orders was easy. Every game was unique, and in those days you could pretty much put anything on the shelves and someone would buy it." In fact, so much money was generated that things had to change. And, of course, they did.

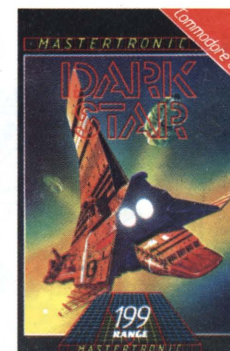
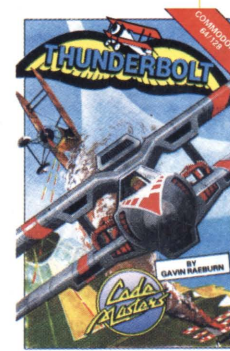
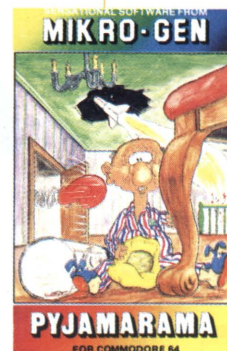
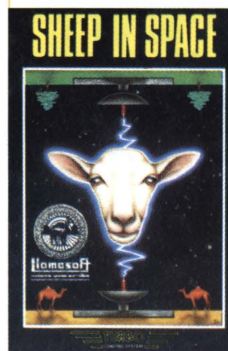
## Corporate invasion

In 1982, Trip Hawkins set up Electronic Arts with the intention of providing a stable, legitimate base for videogame development. According to **Nick Gibson**, a games analyst at Durlacher Research, this was a seminal moment: "EA was an industry leader and a trend setter. In particular, it was instrumental in creating the studio concept of games development (ie, a collective of thirdparty developers published under one group brandname), and some of the earliest publishing models." EA was, perhaps, the first company to enter into development with a clear business plan and an ambition to make real money, like a proper corporation.

Companies in the UK eventually caught on. In 1983, Martin Alper and

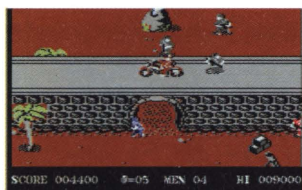


Key 8bit platformer *Pyjamarama* was converted to the Amstrad CPC by a young and ambitious Dave Perry in 1983. Publisher Mikro-Gen raised his salary to £9,000 in recognition of the game's success



Game packaging, rather like the software itself, was cheap, cheerful, and speedily produced in the 8bit era. As for instruction booklets, well, Jeff Minter wrote and crudely illustrated his own for *Sheep in Space* (left)





#### Developers quickly learnt that conversions, great characters and film licences sell games

Frank Herman set up Mastertronic – a publisher dedicated to churning out budget games written by freelance programmers in a matter of days (some of which went on to sell hundreds of thousands of copies). Gremlin, set up a year later, also ran itself as a business rather than a collection of friends indulging in a hobby. Which is why, when its first game, *Wanted: Monty Mole*, sold thousands of copies, the team went on to produce *Monty Is Innocent*, *Monty on the Run* and *Aufweidersen Monty*. “When you’ve got a good thing, milk it,” admits Bailey, effectively spelling out the modern videogame industry ethos.

There were plenty more lucrative business models waiting to be discovered. Ocean Software, for example, was the first company to actually buy a licence, purchasing the rights to Century’s *Hunchback* coin-op and turning it into a hugely successful

8bit computer game. Throughout the rest of the ‘80s, the company pretty much lived on licences, both from the arcade industry and from TV and film, turning everything from ‘Miami Vice’, ‘Knight Rider’ and ‘Platoon’ into a hastily produced game.

Several companies took Ocean’s lead. Domark, for example, existed for a while solely on the profitability of its own dire film conversions including *A View to a Kill* and the laughable *Friday the 13th*. Later, Probe Software (initially set up by Fergus McGovern as, yes, a hobby run from his home) would continue the legacy with a long list of 16bit film licences, including ‘Alien 3’, ‘Robocop 3’ and ‘Judge Dredd’ which the company uniformly turned into platform-based shooters.

During the 1980s, then, videogame development evolved from a geek-led shambles to a snowballing, high-profile business. “It was a natural progression,” states Gibson. “The emergence of publishers, marketing budgets and formal publishing contracts necessitated the creation of companies and the legal protection they could offer development talent.” Without the rise of publishing giants like EA, Ocean, Gremlin et al, who provided programmers with fair contracts, Crowther could still be writing games for a thousand quid a throw, Perry would be on about £12 grand by now, and the Oliver twins would still be entering competitions on kids’ TV. It doesn’t bear thinking about.

Despite the maturing of the business side, however, game development was often still a one- or maybe two-man (artist/programmer) affair. Well into the mid-’80s, the likes of the Olivers, Jeff Minter, David Braben, Archer Maclean, Paul Woakes and so on were knocking out games singlehandedly. It was the introduction

and gradual integration of the Amiga and ST computer systems that really altered the course of videogame creation. Despite a series of price drops, the 16bit machines were several times more expensive than 8bit models and developers found they had to exploit all the new visual and audio capabilities to attract an audience. Which meant employing artists and musicians as well as coders.

Some companies caught on fast. Emerging as a fully fledged developer in 1988, Psygnosis managed to build itself into a major publisher in just a couple of years with a string of Amiga hits such as *Barbarian*, *Shadow of the Beast* and *Obliterator*, which, although mediocre in gameplay terms, looked fabulous and capitalised on the public’s new appetite for eye candy.

This new emphasis on style meant a need for slicker marketing and PR. Games weren’t being released in plastic boxes any more, and the ads had stopped using appalling airbrushed art. In effect, the professionalism of the

employer – a place to look for a career, rather than a quick buck. Companies were also having to become more corporate-minded – establishing and endlessly exploiting lucrative franchises to generate revenue. Even innovative games played a part – Psygnosis put *Lemmings* on to practically every home format known to man, and Bullfrog capitalised brilliantly on its *Populous* title, releasing the cynically similar *Power Monger*, and the slightly improved *Populous 2*, in quick succession.

This process was more or less completed with the British launch of the Mega Drive in 1990, and the SNES a year later. As **Demis Hassabis** of Elixir Studios puts it, “The SNES, and particularly the Mega Drive, made games mainstream. As soon as this happened, production values went up – and with them cost. Whereas the traditional gamer was used to putting up with shoddy sound and second-rate graphics, the man in the street wasn’t. In fact, he demanded that they look the part. As a result, the cost of



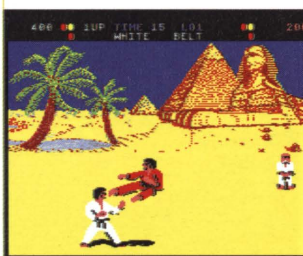
With its visually accomplished games and stylish advertising, Psygnosis led the way into the 16bit age. The early 1990s was a difficult time, but a deal with Sony ensured the company’s survival

**During the 1980s, videogame development evolved from a geek-led shambles to a snowballing, high-profile business. “It was a natural progression”** Games analyst Nick Gibson

16bit market meant the number and type of jobs it could offer was widening.

By the end of the decade, the UK industry had become a legitimate

development spiralled to where it’s at now: a game typically costs over a million pounds and takes anywhere from two to three years to make.”



Some UK developers, such as System 3, creator of *IK+* (left), and Bitmap Bros (*Chaos Engine*, right), found it hard to adapt to the console market





Bullfrog's *Populous* was successful not only because it was a ground-breaking game, but also because it was widely and skillfully distributed by EA. The partnership aided both parties

The process sounded the death knell for many key developers in the UK and abroad. Hewson, Rainbird and Mirrorsoft all disappeared (although the latter probably had more to do with the watery demise of a certain newspaper mogul...), while the likes of the Bitmap Brothers, System 3 and Sensible Software never fully recovered from the transition to a climate where coin-op conversions and extravagantly marketed licences like *FIFA*, *Sonic*, *Mortal Kombat* and *Street Fighter II* started to dominate.

that often separated the winners from the losers. As **Darren Falcus** of Iguana UK argues, "The companies that disappeared all fell into the trap of not getting involved with a large publisher with a presence in the mass US console market," – no doubt thinking of the lucrative Probe/Acclaim and Bullfrog/EA partnerships. Japan was also a vital country to make connections with. At the very end of the SNES's regime, Rare produced its amazingly successful *Donkey Kong*

## Great gameplay was no longer enough; great graphics and a marketable franchise took over. And that meant big teams and wads of cash

The great gameplay of *Sensible Soccer*, *Chaos Engine* and *Speedball* was no longer enough; great graphics and a marketable franchise took over. And that meant big teams and wads of cash.

There were a few UK success stories. At Software Creations, brothers Ste and John Pickford's excellent SNES title *Equinox* did much to cement the reputation of the SNES in the UK, and Core Design, originally set up in 1988 as a subsidiary of Gremlin, adapted well to the new business model. As **Jeremy Smith**, the company's founder and MD explains, "After the success of *Corporation*, we were very conscious of how to follow it. We were lucky. We developed three very successful franchises with *Chuck Rock*, *Heimdall* and *Thunderhawk*. We knew we were well on our way with offers for licences coming from America and Japan and large companies trying to poach our staff. People were obviously starting to take notice of us."

Indeed, it was the ability to make effective international partnerships, rather than come up with brilliant games,

*Country* series as a secondparty Nintendo developer, and Argonaut produced both the Super FX chip and its premiere game, *Star Fox*. In the same year, Psygnosis signed its development deal with Sony, cleverly reading the course of the industry.

Elsewhere, however, there was instability. Many publishers survived simply by porting their Amiga titles over to the Mega Drive and SNES, and when that market started to decline, they were thrown into crisis once again. As **Ian Livingstone**, managing director at Eidos and formerly an investor in Domark, points out, "I joined Domark just as the 16bit market started to go into rapid



While many UK developers floundered in the 16bit console age, Argonaut made a lucrative deal with Nintendo to produce *Star Fox*, an instant hit

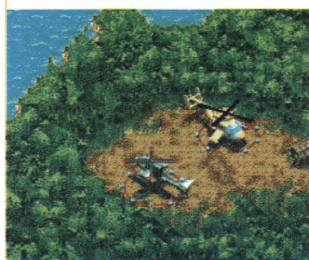
decline, and my first two years in the computer games business were anything but fun. It soon became a battle for survival as publishers turned to the PC to save them from economic ruin. The only good games in development at Domark were *Championship Manager* (thank God) and *Big Red Racing*, but these were accompanied by a whole bunch of terrible games for the Mega Drive, including the bloody dismal *Marko's Magic Football*, a fall from which the company could never recover. It's frightening to think what might have happened had Domark not merged with Eidos."

But that's another story.

### The will to survive

With the introduction of 32bit technology in 1994/95, and the continuing evolution of the Pentium, development team sizes began creeping into the 20s and 30s, pushing costs even higher. At the same time, a saturated market had forced marketing budgets into the hundreds of thousands just to get games noticed. It may have been possible to sell anything in the beginning, but by the mid-'90s only triple-A titles and inspired licences were breaking even.

Inevitably, this has created a business obsessed with product that can guarantee success. Activision, for



Increased production costs associated with console game production in the '90s forced publishers to concentrate on lucrative series like *Strike* (left), *FIFA* (centre) and *Street Fighter* (right), while smaller developers suffered

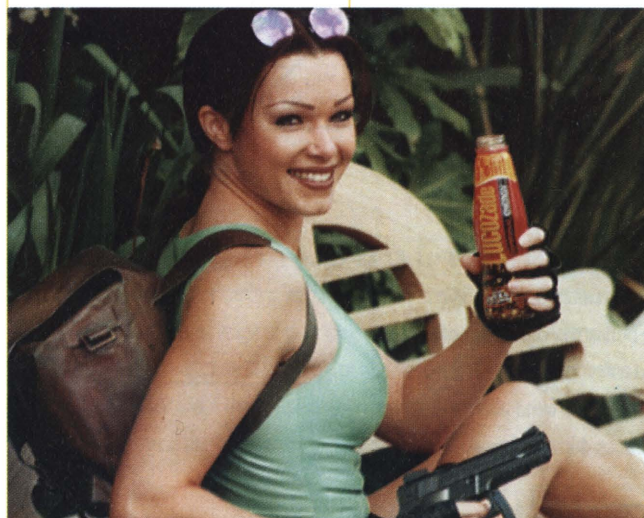


example, began as a tiny but hardcore, hobbyist endeavour in 1979, creating cool games for the Atari VCS. By 1999, the company had written the following into its corporate statement: 'Activision focuses on titles that are, or have the potential to become, franchise properties... These titles can thereby serve as the basis for sequels, prequels, mission packs and other add-ons.' This may not be the most innovative and daring manifesto, but it works. The publishers which own the successful franchises call the shots – and make most of the money.

The growing dichotomy between the financial big fish and the struggling, smaller devcos is having a profound effect on the shape of the industry. In October 1995, following a successful floatation on the stock exchange, Eidos acquired Domark, Simis, Big Red, Centregold and Core Design, effectively propelling itself into the top flight of videogame publishing. A rush started. EA bought long-term development partner Bullfrog, Infogrames (flushed with success thanks to licences such as

'Tintin' and 'Asterix') bought Ocean, and in 1997 Activision took Raven plus the worldwide publishing rights to *Quake II*. Last year, The Learning Company bought Mindscape and Broderbund, but just months later was itself cornered into a \$3.8bn merger with Mattel – the latter no doubt reacting to the purchase of Microprose by rival toy corp Hasbro in August '98.

The industry is polarising, everyone is looking to buy everyone else, undercutting and double-crossing each other in the process. If any company looks a little unsteady, it is immediately targeted for takeover, or worse, asset stripping. In August '98, EA ripped Virgin Interactive apart, taking Westwood Studios and several smaller US thirdparty developers for \$122.5m. Even successful companies find the lure of the megapublisher hard to resist. This year already Infogrames has bought up Gremlin, and GTI swooped in to claim Reflections, purchasing 2.28 million shares. And while the current resurgence for independent startups such as Mucky Foot, Lost Toys and Elixir



**In 1999, licensing plays a big part in game development. Cross-promotions such as the recent Lara/Lucozade campaign provide great ad opportunities**



**From Pitfall (right) to Quake III (main), Activision, like many publishers, now prefers to buy successful licences than take a risk with new ideas**

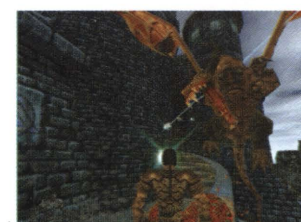
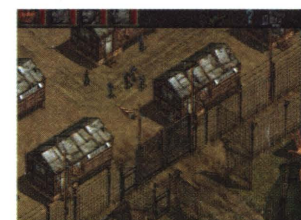
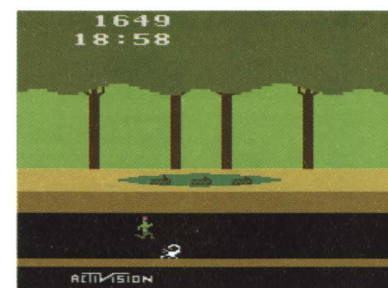
are encouraging, innovative gameplay and a publishing deal cannot guarantee long-term success alone. Control of the videogame industry has moved from the creative minds to the managing directors, the shareholders and the marketing departments.

No one is sure where this will lead, as Bailey jokes, "Who knows, Bill Gates may wake up tomorrow morning and decide he wants a piece of the action and buy up Infogrames, EA and Eidos!" Until that (terrible) day, multinationals like Mattel, Infogrames and EA are bound to control distribution, as they have the cash. As Livingstone puts it, "To be a player these days, publishers need access to serious amounts of capital, franchise titles, content and technology ownership, a broad portfolio of titles in development, critical mass to compete globally, marketing and distribution muscle, and a large crystal ball!" And he would know – Eidos owns, or has long-standing publishing agreements with, 21 developers – which means that for every capital-sucking project like *Daikatana*, there's a modest, but super-

successful *Commandos: Behind Enemy Lines* to boost the coffers.

One thing is clear. There must always be room for fresh talent and new ideas. The film industry's big guns know this, hence the existence of Fox's Searchlight and Disney's Miramax studios; aimed specifically at low-budget, off-beat production. The videogame industry knows it, too. All the best ideas come from the bottom: it was Toby Gard, not Eidos' board of directors, who created Lara Croft; Valve created *Half-Life*, not massive French publisher Havas.

No matter how big a company is, it can't afford to shut itself off from the next wave of Jon Romeros, Peter Molyneuxs and Shigeru Miyamotos, many of whom may well be reading this. As Cook surmises, "New blood is becoming increasingly important if we are to avoid stagnation as an industry. Game production is a dynamic and fast-moving area which is constantly reinventing itself, and fresh talent is an important contributing factor to this process of constant renewal." So give blood. Now.



**Publishers survive by keeping a range of games-in-development on their books. Eidos can call on 'cheap' titles like *Commandos* and its recent new mission disc (top) to keep the profits rolling in, while bigger projects such as *Daikatana* (above) continue to languish in development limbo**



# 1999: The state of play

After 15 years in the game, Britain has built up a labyrinthine software industry based around complex corporate relationships. Here's how it works

## The mega-corps

Forever hanging about on the periphery of the industry, ready to dive in with the odd mega-cash offer, Hasbro, Mattel, Havas and Microsoft have all been buying into entertainment software of late. They make no secret of their intentions: Hasbro wants to be a \$1bn developer by 2001. The future is in their hands.



## The buyouts

Long-standing publishers are finding it harder than ever to resist the lure of the international buyout. Ocean and Gremlin have fallen to Infogrames, Microprose is now part of the Hasbro empire, and Psygnosis has been hung, drawn and quartered by Sony. They retain a corporate identity, but have little power of their own.



## The big publishers

International videogame companies that have a strong presence in most software-producing countries include Activision, EA, Infogrames, GTI and Eidos. A good place to look for marketing and PR work as they tend to represent all their thirdparty developers in-house. Holding their own against the mega-corps. For now...



## The independents

Developers that work for a number of publishers include Interactive Studios, Attention to Detail and Rebellion. In theory, these are more stable to work for than small teams with exclusive publishing deals: if that 'exclusive deal' is canned, it can take the studio with it. Independents often have other deals to fall back on.



## The studios

Britain is home to dozens of small (10-50 staff) development studios – some tied to long-running publishing deals, some wholly or partially owned by publishers and mega corps. Check out [www.ctw.co.uk](http://www.ctw.co.uk) for a list. These are good places to send your CVs as there are no corporate human resources depts to wade through.





## The internals

Most of the key UK publishers, like Eidos and Virgin, have their own internal development teams in Britain, but international imports like Activision, The Learning Company and GTI don't. Employment in an internal studio should be safer, as it's more difficult for publishers to sack internal staff than to can projects by external developers.



## Top of the softs The top ten industry earners last year

- 1 Electronic Arts**  
Recently posted an international turnover of £740m, 34% up on 1998, so it's safe to assume the company will retain its high placing.
- 2 Sony Computer Ent.**  
Sony's net profit fell 19% in the year ending 31 March 1999 to just £932m. R&D on NGPS is blamed – Sony will probably make it back.
- 3 Nintendo**  
Expected to post a 20% rise in profits for the year ending 31 March 1999. Possibly thanks to a 250% increase in Game Boy sales.
- 4 Eidos Interactive**  
Charles Cornwall's ever-expanding company posted a turnover of £169.1m for the nine months leading up to 31 Dec '98.
- 5 The Learning Company**  
Recently completed a \$3.8b merger deal with Mattel, and is one of the biggest software developers in the US.
- 6 Virgin**  
Has had a difficult start to '99 (losing Westwood and LucasArts), but still has Capcom and Interplay deals to lean on.
- 7 GT Interactive**  
Did well through most of 1998, but recently admitted losses of £35m for the last fiscal quarter. May slip out of the top ten next year.
- 8 Codemasters**  
Confidently predicts sales for the current year up to 30 April 1999 to be in the region of £70m. TOCA 2 will no doubt help.
- 9 Psygnosis**  
Unlikely to figure in next year's chart-topping league thanks to a disastrous Christmas performance and disintegration by Sony.
- 10 Infogrames UK**  
In 1997/98 Infogrames boasted a turnover of \$271m and a net profit of \$15.5m. Recent business activities are bound to add to this.

List compiled by ELSPA and ChartTrack based on 1998 figures

## The satellites

A new concept currently being tested by Peter Molyneux at Lionhead. His plan is to give financial assistance to promising start-ups so that they can concentrate on developing games. Big Blue Box is the first apprentice, but there is another – as yet unannounced – protégé on the way...



## The mini publishers

A layer below leviathans such as Infogrames and Eidos, the likes of Codemasters, Rage and Empire fall into this category. As the assimilation of Gremlin, Ocean, et al has shown, no one is immune to takeover – but they have shown tenacity in getting this far. Again, these are good entry points for PR and marketing staff.



## The break-offs

Established programmers, artists and/or designers who have left big companies to set up on their own – eg, Lost Toys (Bullfrog), Free Radicals (Rare), Confounding Factor (Core) and Curly Monsters (Psygnosis) – have a great deal of kudos. This makes them a more stable employment bet than less-hyped studios. At least, in theory.





# Programming

Coding provides the very structure of a game, to which everything else is attached. The graphics engine, physics engine, game logic and AI all come under the programmer's remit, and good coders are always looking for new ways to make each area more efficient and complex

## Inside view

### Codemasters

#### Codemasters took on programmer Richard Smith after graduating

Smith graduated from the University of Bath with First Class honours in June 1998, and started at Codemasters the following month. Since then he has been working on its recently announced *Football Manager* game.

#### How did you get your job?

I put a disk together of examples of my work. This consisted of projects for university (including a simple ray tracer, puzzle-solving AI and my final-year project, a 3D engine) along with several little projects of my own (including a paint package, cartoon animation and a *Space Invaders* clone). I sent copies of this disk together with my CV to eight of what I consider to be the top game companies in Britain. Of those that replied I attended an interview here at Codemasters where I sat tests relating to gaming knowledge and logic tests, and the rest, as they say, is history.

#### Describe your 'daily routine'

I fix any problems that are reported to me, developing a new feature in the game or working on a utility relating to the game somehow. As the title is nearing the end of its development cycle, I spend more time searching for and fixing any problems than the latter two. However, when I joined I spent a lot of time writing utilities that have since proven invaluable in the development of the game. These utilities are continually updated and improved as required by the people who use them.

#### Pros and cons?

All I ever wanted to do was write computer games, so for me the job is the pro. I can hardly wait until the day I walk into a High Street store, pick up *Football Manager* and say to myself, 'I helped to write that!' As for any cons, for me there aren't any. However, if you don't like working long hours to meet a deadline, you might not agree.

**I**n the programming realm, Artificial Intelligence and physics are becoming so advanced that many companies are now employing staff to specialise in these fields alone. "The job for me is something involving maths, physics, geometry and psychology, but how they mix in your head is down to you," explains **Scott Lamb**, a programmer at Interactive Studios. It's an intellectually intense and demanding job – which is perhaps why the industry is crying out for new talent.

## Skills

A good knowledge of C (and its sequel C++) is absolutely essential, as all game systems are now programmed in this language. Experience with Assembler is also a bonus – if only because it teaches you how to write code 'closer to the

is expensive. Thriftier programmers need not fear, however, as there are cheaper options. Lamb offers, "The most popular free compiler is called GCC, and is distributed under the GNU system so it's completely free to the user, but as it's not a commercial product, it doesn't give you the polish and support that an MS product has." As for learning the language, there are hundreds of beginners and advanced user books available – buying them via the Net (eg [www.amazon.co.uk](http://www.amazon.co.uk)) is cheaper.

## Qualifications

Requirements vary from company to company. Although some developers insist that applicants for programming positions have a degree in computer science, many others acknowledge that these courses often bear little relevance

**Programmers are usually taken on as juniors and will begin by carrying out dogsbody tasks such as text parsing, menu writing and fixing bugs**

metal'. Lamb reckons that anyone wanting to write PC games will need at least a smattering of Windows programming skills as well as a working knowledge of *DirectX*. There are plenty of beginner's and advanced guides available for both, and you can download the *DirectX SDK* free from Microsoft's Webpage ([www.microsoft.com/directx](http://www.microsoft.com/directx)). Knowledge of maths, physics (especially mechanics), AI and 3D engine programming will also serve you well – as will solid debugging skills. Links and further information on all of these can be found at Interactive Studios' Game On site (see p23).

## Getting started

All you need to get started is a PC and a C compiler – *MS Dev Studio* is a user-friendly, fully featured option, but

to the actual job of game programming – concentrating, as they often do, on business and science programming. Furthermore, several developers **Edge** has spoken to, including Martin Edmonson at Reflections and Demis Hassabis at Elixir Studios, mentioned that they are now pulling more graduates from maths and physics degrees to work on the complex routines behind today's increasingly huge and realistic game worlds. If you are going to enroll in a computing degree, however, make sure C and C++ figure as central components and check out the options offered by the more videogame industry-aware establishments (see p20). There are also several BSc and post-grad courses in AI for those who want to specialise in this area of programming.



## Career prospects

Programmers are usually taken on as juniors and will begin by carrying out dogsbody tasks such as text parsing, menu writing and fixing bugs. The next step is coding the big stuff – AI, physics, etc – which should eventually be followed by a lead or senior programmer position (once one or two projects have been completed successfully, naturally). Team leadership on a project may well then be followed by a shift to producer status, although this will mean less first-hand contact with the development of the game.

## Salary

Again this varies considerably, depending on the company you apply to and the current state of the industry. However,

newcomers with little or no programming experience should expect around £12-15K. This rises with experience and can creep into the £25-30K territory after a few successful projects.

## Getting in

Any employer will want to see a demo of your C programming abilities, but this doesn't have to be a 60fps 3D engine. "You need to show what you can do that's relevant to the position you want," asserts **Phil Oliver**. "Nobody expects a jack-of-all-trades. Just because you can't write *Quake* doesn't mean you're no good. If a programmer writes a simple game such as *Pac-Man*, they will be offered a job!" **Martin Edmonson** wraps the subject up: "Our ideal new recruit would be someone with a good degree – preferably, but not essentially, in the maths/physics area, and a small but impressive demo. Quite a few such people are now working on *Driver*."





# The videogame artist

When you boot up a game, everything you see – from the glossy prerendered intro sequence through to the end credits – has been produced by the art department. It's the most visible job in the industry and as such requires natural flair and a lot of vision

**L**ike programmers, artists are often expected to have a wide range of skills, but many end up specialising. Key areas include 2D bitmap art, low-polygon ingame shape building, 3D modelling and animation, prerendered graphics (although this is becoming less common) and even concept visualisation. **John Miles**, art director on *Dungeon Keeper 2* reveals to **Edge**, "We employ a limited number of very talented artists on their sketching ability alone."

## Getting started

As most professional art packages tend to cost thousands of pounds, it isn't practical to just go out and buy, say, *3D Studio Max* and play around with it at home. Instead, check out the cover discs on **Edge's** specialist sister mag

*Computer Arts* and various PC publications for demos and updated versions of famous packages. Alternatively, visit one of the many shareware sites available on the Internet (eg [www.jumbo.com](http://www.jumbo.com) and [www.download.com](http://www.download.com)) and pick up a free or low-cost art package which will at least get you started.

## Skills

Artistic talent, funnily enough, is a prerequisite. Experience with at least one 3D package is also advisable: the industry favourite is probably *3D Studio Max*, although *Softimage* is strong for

animation. Alias|Wavefront's *Maya* is also a very powerful application (but would be used mainly for FMV) and *Lightwave* is still employed, especially for prerendered sequences. Confounding Factor's **Toby Gard** reckons that it doesn't matter which one you learn: "If an artist has used a 3D package, then they know 3D... the concepts are the same for all of them." Some 2D experience would also be advisable; the old Amiga classic *Deluxe Paint* is still in use, accompanied now by *Adobe Photoshop*, *Illustrator* and *Paintshop Pro*. An understanding of the role of the programmer is also a bonus.

larger developers tend to categorise artists. So you could find yourself sporting a title like 'concept artist', '3D modeller', '2D texture map artist' or 'animator'. The next step up would be as lead artist on a project, followed, perhaps, by a senior artist role (where you'll be overseeing the artistic output of the whole studio). From here, it may be possible to go further into management, perhaps as a producer or studio head.

## Salary

"I started on £12,000, which may be a bit low for a graduate – it's probably

**You'll need a portfolio to attract any attention. This will usually consist of examples of computer work and traditional art; sketches, storyboards, even sculpture**

## Qualifications

"Start with a good general art course," suggests Miles. "A diploma in Art Foundation helps. Choose one that lets you experiment with all media, from oil paint to pixels to chicken offal." (Many further education colleges run Art Foundation courses – your local library will hold the details.) Following that, courses in computer graphics and animation are available at diploma, degree and post-graduate levels, but make sure you choose one that teaches you at least one of the major 3D packages. Check out the listings section on p22 for several relevant degree options.

## Career prospects

The structure varies considerably, but if you join a large company you may start as a junior artist – attaining full 'artist' status only after a year or so of work. Things are made more complicated, though, by the fact that

more like £15,000 these days," relates Toby Gard. "Although we pay more, the amount your salary increases by depends on the company, but a good lead artist with a couple of successful games under their belt would be expecting at least £30,000 in this country, and even more in America."

## Getting in

You'll need a portfolio to attract any attention. This will usually consist of two sections: a videotape or CD containing examples of computer work (models, textures, animations, ingame work, etc), and a traditional art portfolio containing sketches, paintings, storyboards, life drawing, even sculpture or model making. To actually get an interview, try sending the demo and a CV out to one of the employment agencies (see p26), or get it straight to a few developers you're interested in. You'll also find job ads in **Edge**, *CTW* and, occasionally, *Computer Arts*.

## Inside view



**While lead artist at Core Design, Toby Gard created Lara's 'assets'**

After coming up with the idea for *Tomb Raider* at Core, Gard left the company to set up his own – Confounding Factor. He is currently working on *Galleon*.

## How did you get into the industry?

After spending 1991 working at a small computer company building PCs, I sent off some disks with various animations and pictures I'd made on my Amiga to a few developers I liked at the time. Core offered me a job and put me on a game called *BC Racers*, which was basically *Chuck Rock* meets 'George and Mildred'. Bizarrely, it wasn't very successful, but while making that I came up with the idea of *Tomb Raider*. Unfortunately, until Paul Douglas arrived at Core there were no programmers who would do anything except laugh at me when I explained the idea to them. About six months after *TR* was finished, Paul and I left Core and came to Bristol to set up Confounding Factor.

## How did your career progress with experience?

When I started at Core I was put straight on *BC Racers*. I had to do all the graphics, and at the time I found it a real struggle to be thrown in at the deep end like that. I'd had no experience, in fact I'd never even owned a console, so it was a case of having to learn a lot of things very fast. Ultimately, after the fear of being sacked for ineptitude passed, it turned out to be a damn fine crash course in game graphics constraints.

## Describe your 'daily routine'

I get in for about 9:30 in the morning and doss around until about midnight.

## Pros and cons?

The main perk of working in games is when you get to meet people who have enjoyed playing one of your own. Apart from that, we get to take childish things like games really seriously while pretending we're actually adults.





# Game design

While game development actually starts with designers, they are often conceived as the auteurs of the development process, dealing merely in ideas and concepts, while everyone else handles the technical content. The reality is a little more complicated

## Inside view



**Dene Carter (centre) is lead designer at Big Blue Box Studios**

Dene Carter is currently lead designer and co-MD at Lionhead satellite Big Blue Box Studios. He previously worked for Bullfrog on *Dungeon Keeper* and *Populous III*, and before this ran Electralyte, a one-man company where he wrote CBM64 and Amiga hits such as *Rockman*, *Druid* and *Cloud Kingdoms*.

### How did you get into the industry?

I started at the age of 15, back in 1985 when most other teenagers were practising their 'Wild Boys' dance moves, blow-drying their hair upside down and eyeing up girls in pink leg warmers. My first commercial game, *Rockman*, was written for the ZX Spectrum and published through Mastertronic. It was written in compiled BASIC and took me about two weeks from start to finish.

### Describe your 'daily routine'

My day-to-day activities can be divided into three distinct areas: managerial (writing documents with lots of bullet points, answering phones and getting ulcers), programming (being stuck in front of a monitor hitting keys and swearing at compilers), and design. Regardless of how many talented and imaginative individuals may be working on a game, someone has to make sure that everyone is working towards the same goal. Being a designer does not mean 'getting your own way' or 'being the company's single creative genius.' It means ensuring that all of the ideas form a cohesive, entertaining whole... and writing huge amounts of documentation.

### Pros and cons?

Most rewards come from the design aspects of my job. There's nothing quite like seeing a whole set of seemingly disparate ideas come together. The flip side to this is stress, caused by long hours and impending deadlines. The games industry is fairly unforgiving; you are only as good as your last title.

**T**he first step in the design process is usually to write a short document outlining the game concept, which is then submitted to a studio manager. However, if it is accepted, the designer will then have to write a mammoth design document which covers every element of the game – from character design, to control interface, to map layouts. (The document will constantly evolve throughout the development process as the technical feasibility of the ideas is tested.) Designers will also be expected to test the game, continually argue its merits with the artists and programmers, and contribute towards the construction of the levels. Not even Shigeru Miyamoto can get away with sitting alone in deep contemplation, occasionally drawing the odd, inspired game character.

## Getting started

Apart from coming up with your own concepts, characters and settings, playing lots of games and analysing their strengths and weakness is a crucial way

to prepare for the job. "Play good games. Play bad games. Look at each of them and examine them to death. Be obsessive about it," says **Dene Carter** at Big Blue Box Studios. "Before you even load a game you should ask yourself questions. Why does the game interest you? Is it the concept? Is there an image that you really identify with that makes you want to play?" Also, if you have a PC and a modicum of technical ability, get hold of a *Quake* editor and design some levels – nothing

impresses a developer more than practical, demonstrable ability.

## Skills

First, the obvious one – a deep and encyclopedic knowledge of games and how they work. Carter again: "Most of the great computer games have an underlying hook that makes them fun to play. The ability to identify exactly what it is, is a vital and often overlooked skill." Communication skills are also important – the designer's main job after coming up with the game concept is to sell it to the studio manager and then explain it to the rest of the development team – both require patience and assertiveness. Finally, a basic knowledge of C will help you understand the development process, and experience with art packages such as *Alias|Wavefront*, *3DS Max* or *Deluxe Paint* would also be useful for bashing out level design and character ideas.

## Qualifications

Although game design courses in Japan, the US (University of Michigan) and

determination to learn, which is always a good trait for the hopeful designer. Plus, gaining a degree in a subject such as art, design, film or media studies will provide the designer with invaluable knowledge in areas that are directly related to game design."

## Career prospects

Once again, this depends on the size of the company you join, but new designers often begin as assistants on current projects, helping out with level design, script writing and play-testing. The next step would be to produce a game concept and see it through to production. From here, career progression may involve a senior design post (overseeing several products) or a switch to a producer role (ie, taking full managerial responsibility for a project or group of projects).

## Salary

Design assistants (or 'gameplay coordinators' as Psygnosis used to call them) will probably begin at the £12-14,000 mark, and this can rise to

£20-24,000 with official game designer status. Senior designers and producers can expect around £30-40K.

## Getting in

Game design jobs are advertised in **Edge** each month and through employment agencies, but it's a tough nut to crack for complete beginners. As **Graham Davis** at Wayward confirms, "The role of game designer is the one for which I get the most CVs. The vast majority are from people that love to



play games but have not yet worked in the industry. As you can imagine, that is a lot of people." It may be necessary, then, to begin in something like game testing (see p14) and work your way up. If you do get an interview, it will invariably involve discussing a key game – its aims, its strengths, its weaknesses – which candidates must be able to do "intelligently and confidently." Davis recommends practising this before the big day. Sending a well-produced CV and a couple of game ideas to developers and/or publishers may be a better way into the job than waiting for ads to appear. Carter advises sending the envelope to the development manager and adds, "Make sure your design is coherent, has original features, and is presented in a clear, simple and attractive manner. A single side of A4 with scribbled notes will be thrown away. A couple of sides of A4 describing the style, mechanics and hooks of the game, with the odd picture showing what you mean, will work wonders."





# The musician

It could be argued that the game musician's job was made obsolete when CD-ROM arrived, but dance music luminaries who lent their names to the *Wipeout* games inspired hordes of bedroom DJs. For the computer-literate game musician, then, a renaissance is just around the corner

**I**n the past, mastering the tricky intricacies of the CBM64 SID chip was an esoteric skill, but, suddenly, with CD any studio-recorded track could be used in a game. However, very few developers can afford the *Wipeout* approach – filling each game soundtrack with Orbital and Prodigy tracks – so there is still very much a place for the dedicated game impresario. Furthermore, the growing trend for 3D sound – supported by Microsoft's *DirectMusic API* – is bringing the talented, specialist audio technician back into the frame.

## Getting started

The basic equipment you'll need is a PC, a soundcard and a MIDI/audio sequencer. Jester Interactive's **Tim Wright** suggests getting experience with a professional sequencing package, but there are cheaper options for the beginner, such as Magix's *Music Studio*

and *Music Maker* titles (it's also worth playing around with interactive music 'toys' such as Fast Trak's PC title *Dance Ejay 2* and Jester's *Music* title for the PlayStation). Whether or not you need a MIDI keyboard depends on whether you're planning on actually playing the music or simply constructing it from samples. For the former, Wright recommends going to a large, electronic music retailer and trying out everything it has to offer, "If you're composing in a certain style of genre then a dedicated unit would be best. If you think you'll be composing everything from classical to deep house, then go for a more generic, well-rounded module."

## Skills

"It's not so important what hardware or software you've had experience of," insists **Colin Anderson**, head of DMA's audio dept. "You can tell from listening to examples of people's work whether

they have the necessary production skills or not. It's better to be adaptable and to be able to learn the basics of a package quickly. If anything, try to learn one package well rather than a little about lots of them." Some of the most commonly used packages in game development are *Cubase VST*, *Logic Audio*, *Sound Forge*, *WaveLab*, *Cool Edit Pro*, and *Pro Tools*. Wright adds that it's essential to be able to emulate a wide variety of styles when you're working in-house.

## Qualifications

Although classical music training and/or specialist computer music courses will no doubt impress potential employers, a well-put-together demo disc or cassette should do the trick just as well. Music can be studied at A-level, HND, BTEC, BA and MA levels (see p22), of which many now feature MIDI programming.

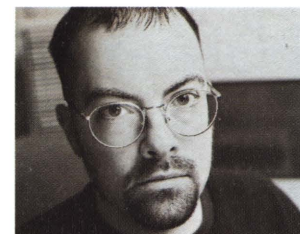
salary to increase steadily, and after five years' experience £20-25,000 (plus bonuses) would be more typical."

## Getting in

Jobs are advertised in *Edge*, *CTW* and, occasionally, *Computer Music*. If you want to go through an employment agency or apply direct to a developer, you'll need a demo. "This should have a few tracks in as many different styles as possible," suggests Wright. "Eight 1-2-minute tracks in diverse styles, or a quick montage can be useful. This means the listener can assess your skills in the first few seconds." Anderson adds that it may be a good idea to redesign the music for a popular game. "It shows that you understand what's required better than a tape with some of your greatest hits."

Martin Severn at Pumpkin Studios also recommends taking your demos along to trade shows, where you can impress prospective employers in person. As for

## Inside view



Photography: James Cumpsty

### Multiskilled Tim Wright, production manager at Jester Interactive

Wright started his videogame music career ten years ago as a freelancer at Psygnosis working on Amiga versions of *Shadow of the Beast II* and *Awesome*. He later went in-house to provide material for *Wipeout*, *Wipeout 2097*, *Colony Wars* and *Formula One*. He has since worked for several other developers including Bullfrog. Jester's first product, *Music*, was released by Codemasters last year.

### How did you get into the industry?

A chance meeting with a guy in a computer shop in Liverpool in 1989 led me to be involved in the production of an Amiga demo called *Puggs in Space*. This demo caught the eye of Ian Hetherington, the then-MD of Psygnosis, and it went from there, really.

### Describe your 'daily routine'

At Jester I am not only the musician, but also designer, production manager, PR fella and tea stirrer. 'Work' is either penning tunes, creating sound effects or having design meetings with product producers. There's also the odd bit of ordering musical kit to deal with, setting up mixing desks and patch bays, tinkering with bits of software and assessing the latest Sony PSX DevTools or the latest version of *DirectX*. 'Daily routine'? Not in games development. That's what makes it exciting.

### Pros and cons?

I have a certain amount of kudos and profile in the industry. I get to write music in various styles, which is a challenge in itself. I get to travel here and there and get pissed in lots of different time zones. But before everyone legs it down the job centre to apply, you should know that it can be, and often is, damned hard work. And just because you think you've written a masterpiece, that doesn't mean everyone else agrees!

Although classical training and/or specialist computer music courses will no doubt impress potential employers, a good demo should do the trick just as well

## Career prospects

Start as a musician and, after a few successful projects, become a senior musician or manager of the audio dept. There's also the opportunity to freelance once you have enough experience, as Anderson explains, "It's incredibly hard work, but your potential salary is only limited by your negotiation skills and the number of hours in a day."

## Salary

"A starting salary of £12-14,000 would be average for someone with great potential but no track record," reckons Anderson. "Once you have a few good titles under your belt you can expect the

format, CD is a good idea. If you don't own a CD writer, look in the back of any electronic music magazine for companies who can do the job for you.

Finally, two pieces of good advice from Wright: "Don't send your demo to the audio department, send it to marketing or the designers of the product. Why? Well, if you were an in-house musician would you rush up to your boss and say 'Hey, give this guy a listen – he's better than me!?' Exactly. And whatever you do, don't ever, ever, ask for the tape or CD back, it just pangs of a lack of commitment, and really, they're so cheap these days it'll cost more to post it back to you!"





# Game testing

As with journalism, the popular myths concerning game testing greatly underestimate what the job is really about. True, testing essentially involves 'playing games all day and getting paid for it' – but it is as a dogmatic, critical pursuit rather than a casual whim

## Inside view



**Andy Robson, testing manager for *Black and White* at Lionhead**

Robson began game testing at Bullfrog, working on titles like *Syndicate*, *Theme Park*, *Dungeon Keeper* and *Theme Hospital*. When EA bought the company out, he left to join Lionhead. He is currently testing *Black and White*.

### How did you get into the industry?

Well, I used to be a YTS footballer, until I jacked that in and became a hod carrier in the building trade. But I used to take days off and play games all the time with my mates. That's when I thought, someone must be able to pay me for doing this? I was good at games and knew what people liked to see and play. So I phoned up Bullfrog and asked if I could do some beta testing for a couple of weeks. And it went from there.

### What does your job involve?

I am the nagging pig of the company. I have to chase people all the time to get new versions, features and bug fixes in the game – which is very difficult sometimes. I also help with all the balancing in the game – tutorials, level design, multiplayer, etc – and there's all the config testing to do as well. I get work experience people in every week: they give us fresh eyes and good ideas, so they're very helpful.

### Describe your 'daily routine'

My routine at the moment is getting the multiplayer game up and running – which means getting it stable enough to play. I'm also balancing the gameplay – so the beta testers are giving me valuable feedback in this area.

### Pros and cons?

The nice thing is to see the game go to number one. Also, getting a first time pass from Quality Assurance is great: you work so hard and spend so many hours playing the game to get it as stable as possible and as bug-free as you can, that when all the hard work is over and the game has passed, it's a great feeling.

**T**he game tester plays a vital role in the gestation of any videogame: they are the first people outside the development team to see it, and their suggestions shape the whole process, from the moment an object is visible and movable on screen to the hours before the product ships – usually around two years later. According to **Steve Lycett**, head of testing at Gremlin, the content of the job essentially evolves with the game, "At alpha stage (the point at which the foundations of the gameplay are in place), we check for major crashes and flaws in gameplay (ie, the AI messing up) and give feedback on how to improve playability and overall feel." From here testers work on new features such as multiplayer modes and additional levels as they are added until the game reaches beta – where

everything is supposed to be in place. This is the exhaustive bit, checking for tiny bugs that have escaped the screening process so far. Most developers have an in-house testing section, but publishers will often re-check the games in their own QA depts before manufacturing begins.

## Skills

Unsurprisingly, the ability to play games well and appraise their strengths and weaknesses is a vital element of the job. "I would say that communication skills are also very important," points out Lionhead's

**Andy Robson**. "You have to work in

teams and get your ideas across to different people every day, so if you can't communicate you're going to struggle." Problem-solving abilities, a methodical approach to work, and a good standard of computer literacy would all be welcomed by a potential employer.

## Qualifications

This is really a job where gaming experience and knowledge are much more important than any academic achievement, so formal education isn't so significant. However, potential employers will no doubt be impressed by a good basis of GCSEs.

## Career prospects

"In QA itself there are a couple of levels to work up to," says Lycett. "Each team of testers has a lead tester, then a supervisor overlooks each type of product (console/PC), and finally there is someone who will actually run the department."

Testing is also a good jumping-off point for a number of different roles, as Robson points out: "I know a lot of people who have started out as testers, but after some hard work, are now lead programmers, network programmers, level designers, assistant producers, etc. That's the beauty of testing – it's a great learning ground

**It may be worth contacting a few developers directly – if they can't offer you a job, they may be willing to give you work experience for a couple of weeks**



for people wanting to get further into the games industry."

## Salary

According to Robson, testers can start out at about £12,000 a year, while lead testers will probably be on around £18,500. Steve Lycett at Gremlin reckons complete beginners should expect £8K, "But there is *lots* of overtime available, and this usually helps to push the wage up to an agreeable level."

## Getting in

Look in **Edge** and send a CV to a selection of employment agencies (although they may be looking for more experienced testers). It may be worth contacting a few developers directly – if they can't offer you a job, they may be willing to give you work experience for a couple of weeks – which will at least give you some concrete experience to put on your CV.





# The videogame journalist

Along with game testing, journalism is often seen by those outside the industry as an easy, dream job for videogame fanatics. Getting your hands on the latest hardware and seeing games first has its ups, but constant deadlines and fighting for exclusives is *not* the 'easy option'



**I**gnore the clichés ('paid to have fun', 'paid to travel abroad' and 'paid to drink yourself under the table in the name of 'negotiations)'), and you'll find that the plight of the videogame journalist actually involves writing news, previews and features, as well as reviewing games, conducting interviews and securing exclusives. Even game reviews are fraught with tension and frustration: having to complete an RPG designed to test gamers for at least 40 hours within two days can try the patience of even the most ardent game fans. However, frequent foreign travel, the early availability of new titles, and a complete lack of routine often more than make up for the downsides.

## Skills

Writing ability is an absolute must – as **Edge's** own launch editor **Steve Jarratt** points out, "It doesn't matter how great a gameplayer you are, if you can't string a sentence together you'll be doomed forever to the misery of the tips pages." A modicum of gaming

skill and a decent knowledge of the videogame industry and its history are important, too. However 'literate' you are, your opinions will lack credibility if you've never heard of the SNES and think Ken Kutaragi is a Japanese techno DJ. Social skills are also important, plenty of your time will be spent bargaining with PR people and interviewing industry pundits – indeed,

**A knowledge of the videogame industry is important. Your opinions will lack credibility if you've never heard of the SNES and think Ken Kutaragi is a Japanese techno DJ**

whether or not your magazine gets an exclusive cover story often hinges on your relationship with the developers. Networking – horrible as the term may be – is par for the course.

## Qualifications

Although an A-level or degree in English Literature looks good on your CV and proves you have writing and grammatical ability, formal qualifications are by no

means essential – some of the most talented journalists in the business did not bother with further education. Several universities and colleges run specific courses in magazine journalism which may be worth looking into, especially if you ever plan to write in different spheres of the media beyond videogames. The Periodicals Training Council (contact 0171 404 4168) has a list of accredited courses, which you can also check out on its Website ([www.ppa.co.uk/ptc/](http://www.ppa.co.uk/ptc/)).

## Career prospects

Most enter games journalism as a staff writer, responsible for churning out between 15-25 pages of news, reviews and previews a month, as well as visiting developers and writing the odd feature. From here, progression depends very much on the size of the editorial team. The next step up could be as reviews editor, or features editor – it could even be straight up to deputy editor, although this will usually take a couple of years. The major publishers – Future Publishing, Emap, Dennis, etc – carry a number of videogame magazines and you may have to move around a lot

been known to cross over into game development, taking on PR, game design and producer roles.

## Salary

Journalism is certainly not the most well-paid profession in the videogame canon – at least not to begin with. Staff writers can expect to earn around £10,000 a year, while editors usually earn between £18,000 and £30,000 depending on the status of their title (salaries at the upper end of the scale are rare). Senior editors can expect somewhere in the region of £40K.

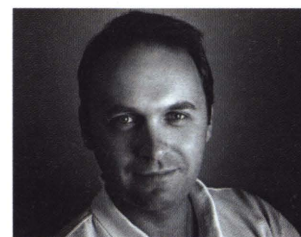
## Getting in

Vacancies are often advertised in the magazines themselves as well as in *The Guardian Media* section on Mondays and Saturdays, and occasionally in the *Press Gazette*. If you are asked to submit examples of your writing, make sure they are geared specifically towards the magazine you are applying to – in other words, learn the 'house style' of the title: **Edge** never uses the single person, for example, so filling a sample review with 'I thought this' and 'I thought that'

immediately shows that you have no understanding of what the magazine requires. Also, check your spelling and grammar before sending any writing samples to a magazine, it pays to be accurate.

Alternatively send a CV and two or three sample reviews to the editor of your favourite magazine(s); it may also be worth enquiring about a work experience placement.

## Inside view



**Edge's** launch editor **Steve Jarratt** has edited numerous game mags

Beginning his career in videogame journalism as a staff writer on *Zzap!* 64 14 years ago, Jarratt then edited a succession of magazines including *Crash*, *CU Amiga*, *ACE*, *S – The Sega Mag*, *Commodore Format* and *Total!*, the UK's first independent Nintendo mag, before launching **Edge** ("My finest moment") in 1993. He went on to launch *The Official PlayStation Magazine* and *T3*. He is now working on several forthcoming projects for Future Publishing.

## How did you get into the industry?

Pure luck. When the *Zzap!* job was advertised in the mag, I thought, 'Ah, what the heck! I read *Zzap!* religiously and figured Gary Penn and Julian Rignall had the best jobs in the world, so I embellished my CV slightly and wrote off. They offered me the position, and just to make absolutely sure I took it, the fates conspired to make me redundant from my old job.

## Describe your 'daily routine'

Sadly, the only gameplaying I do now is self-funded (ie, at home with N64 games that I – gulp – pay for myself). I'm now working on several magazine projects, and so I don't really have a fixed routine as such. Which is how I like it.

## Pros and cons?

Pros: working in a creative environment, job satisfaction, meeting some very important people, press ligs: among others, I've flown planes, driven tanks, crashed a Formula First racing car and – my favourite – visited Skywalker ranch in California. Cons: stress.

## Any advice for young hopefuls?

Learn to write. Get a bloody good CV. Watch the job ads. Try and get some freelance. Work for nothing. Be creative. Do research. Don't give up: even the best games journos grow old, so as soon as they move on to bigger and better things, be there to step into their shoes.



# Marketing and PR

Once a game is in development, publishers need to ensure that the public are hungry for details. Both marketing and PR roles feed that appetite. Hype-fuelled launches and licences are invaluable to a title's success; it's all about selling the right product to the right people

## Inside view



Eidos' marketing manager David Burton works with *Tomb Raider*

### How did you get into the industry?

I suppose like the majority of people I did not find my career through any great plan. After gaining a degree in marketing, my first 'proper' job was as a product manager for a photographic company. After 12 months I became bored and quit, then on a tip-off from my sister, who worked for a games distributor, I applied as national account manager with the sales/merchandising arm of US Gold. Prior to this my only experience in games was of a Commodore 64 while at school.

It was the family connection that opened the door, but I like to think I got the job on my merits! A year later I was headhunted by Microprose to be UK sales manager. After two years I became tired of sales and crossed over to be a product manager. Later, I joined Interactive Magic and then finally Eidos as marketing manager.

### Describe your 'daily routine'

Now, I manage a team of two product managers while juggling my own titles – of which *Tomb Raider* is the biggest. My role is essentially a mix of managing (people, projects and budgets), creativity (briefing design/PR/promotions agencies) and communicating (with other offices and departments).

Days typically consist of 50 per cent on email, 20 per cent at meetings, 10 per cent on the phone and the rest of the time is spent avoiding people who are trying to sell me something.

The job of a videogame marketing department is to work out how to bring each product to the public's attention so that when it is finally released, it sells millions of copies – or, as **Martin Kitney**, marketing manager at Rage Software, puts it, "Creating awareness as early as possible and maintaining the hype right up until the launch of product." The job of a PR department is to get videogame mags, newspapers and lifestyle rags to print

worldwide PR manager at Fox Interactive, concurs, "Communication skills are paramount. You need to be able to communicate, not just with games journalists, but also with tabloid/broadsheet press, TV and radio media." Griffiths also recommends, "A good command of the English language and creative writing skills," (the first point of communication between game PR and mainstream media is often by way of the

dizzy heights of marketing director. In PR, you'll probably start as a junior PR exec, move on up to senior PR executive, then to PR manager and ultimately PR director.

## Salary

As usual, this can vary greatly from company to company depending on your qualifications and experience, but PR and marketing assistants can usually expect to earn around £10-

16,000 a year to begin with – this will rise gradually to a healthy £35,000 and over at the upper end of the scale.

## Getting in

Marketing and PR jobs can't be found in *The Guardian Media* section on Mondays, as well as in specialist publications *PR Week* and *Marketing Week*. A confident, enthusiastic attitude, flexibility, and a bucketload of promotion ideas are key.



**It's quite rare for developers to have their own PR or marketing staff these days, so jobs will invariably be with one of the larger publishers such as Eidos, SCEE, Infogrames, Rage or Codemasters**

previews and reviews of their product – the Holy Grail being 'the magazine cover'. Both these positions have different methods of attaining their goals. Marketing departments will plan advertising campaigns, place promotions with stores (which include competitions relating to the product), etc. While PR reps will arrange exclusive reviews and previews with magazines in order to secure more coverage – they'll also arrange trips to see developers, arrange interviews and conferences, etc – anything, in fact, to keep journalists interested in their products. It's quite rare for developers to have their own PR or marketing staff these days, so jobs will invariably be with one of the larger publishers such as Eidos, SCEE, Infogrames, Rage or Codemasters, etc.

## Skills

"The primary skill is communication," insists Kitney. "It's the key to the job. Whether by phone, email or at a face-to-face meeting, good communication skills are vital if you want to succeed." **Andrea Griffiths**,

printed/digital press release), and adds, "An interest in games helps too!"

## Qualifications

Invariably, employers will expect a PR, marketing or communications qualification. Dozens of universities offer relevant degrees (check out the UCAS guide in your local library), and both the Chartered Institute of Marketing (contact 01628 427500) and the Chartered Institute of Public Relations (contact 0171 253 5151) run their own courses. Also, it's wise to check out the Public Relations Consultants Association Website ([www.martex.co.uk/prca/index.htm](http://www.martex.co.uk/prca/index.htm)) – it has a useful guide on how to get into PR, including recommended university courses.

## Career prospects

Marketing and PR offer perhaps the most structured careers in the whole videogame industry. Newcomers to the former will usually join a publisher such as Eidos, Infogrames or EA as a marketing assistant, and will progress through to marketing executive and marketing manager, finally reaching the





# Retail

Whether delivering the latest titles or negotiating the best peripheral price-points, retailers form a crucial link with the gameplaying masses that starts behind the scenes in head-office and filters down to the sales counter in the High Street

**W**hile retailing might not be considered the most glamorous side of working in the videogame arena, it's a rapidly growing business that probably employs almost as many people as game development and operates on the very frontline of the videogame industry, with the greatest amount of contact with the mass game-buying public. Specialist retail chains, as well as High Street shops such as HMV and WH Smiths, are thriving. Electronics Boutique is now easily the biggest videogame presence on Britain's streets, having recently bought out rival chain Game for £99 million.

## Skills

A good knowledge of games is important, and not just of the software itself, but of the mechanics of the industry: release schedules,

who publishes who, which developers are responsible for which games, etc.

## Qualifications

Whatever level of education you have, there's probably a role for you. In terms of working in a store, retail experience is possibly more valuable than qualifications, but a good base of GCSEs and A-levels are desirable. Those with degrees/HNDs/GNVQs in marketing, finance, accounting, buying, sales, personnel, advertising or computer support, could well find themselves working behind the scenes in head-office, for example.

## Career prospects

If you work for a small independent retailer, your career path will probably be sales assistant, deputy manager, manager. Alternatively, most big chains offer training courses for their



staff to ensure swift advancement.

## Salary

This is dependant on each individual company. Store assistants will probably begin on £9-£12,000 a year, and this may rise to £30,000 for a store management or equivalent head-office position.

## Getting in

Most store vacancies will be advertised in the local press, specialist roles such as PR and accountancy can be found in the national press (*The Guardian*, *Times* and *Independent* newspapers all run employment sections), as well as specialist publications such as *Retail Week*.

## Inside view



**John Steinbrecher, group chief executive Electronics Boutique**

Starting as an assistant manager at Stewart's Ice Cream Company – a US chain of convenience stores – in 1977, Steinbrecher rose through the ranks working in multiple shops, specialising in personnel issues. Stewart's had a retirement plan that vested after ten years, so after a decade Steinbrecher left to join EB.

## How did you get into the industry?

When I left Stewart's my hobby was computer software, and there was an ad in the paper that week for management positions at Electronics Boutique. I started as a manager in '87 – when it was a 67-store chain based mostly in northeast USA. Over the years I was promoted to area manager, district manager, regional manager, director of store operations and finally transferred to the UK to be chief exec of EB Plc.

## Describe your 'daily routine'

There's no such thing, really. It's a matter of staying involved in all aspects of the business, while constantly looking for opportunities to move it ahead. Our agreed offer for the acquisition of Game (our 92-store competitor) has gone unconditional, so now we're spending time integrating that business into EB.

## Pros and cons?

Pros: running the largest specialist retail chain, selling product that I love with people I enjoy working with. Cons: none that I can think of!

## Any advice for young hopefuls?

My career progression should serve as an example of the type of company EB is. If you enjoy helping people, enjoy the product, work hard and make an impact, you will succeed. Since EB became involved in the UK we've brought over pay and performance appraisal systems, training, and a management structure to aid enthusiastic, qualified employees in their career advancement.

## CV savvy

A curriculum vitae is a crucial introduction to your prospective employer. And as the cliché goes, first impressions last. Get this bit wrong and the chances are you will be cast aside, especially if there are a lot of other similarly qualified people going for the same role.

**Edge** asks Graham Davis at Wayward Design to give us a few personal views on what makes a good and bad job application:

### The right stuff

- A clear design with all the facts and no fluff (2-3 pages max)
- A clear statement of personal skills and strengths
- An accompanying cover letter giving a clear statement of what role you want and why you are qualified
- An accompanying demo relevant to the job (ie, *Quake* levels for a game designer, 3D animations for an artists, etc)

### The wrong stuff

- Applications that show no special skills or passion for a specific role (avoid 'I play a lot of games! have you got any jobs?')
- CVs which are thrown together quickly and have obviously not been proof-read for errors
- Multi-coloured, multi-fonted CVs – it looks as though you're covering up for a lack of content
- CVs which show a lack of commitment (ie, a long list of jobs, none of which have been stuck at for more than six months)

There are dozens of Internet sites dedicated to employment opportunities and job application advice. Try [www.graduate-recruitment.co.uk](http://www.graduate-recruitment.co.uk) or [www.careerbuilder.com](http://www.careerbuilder.com) for CV hints. Go to *The Guardian's* excellent [www.jobsonlimited.co.uk](http://www.jobsonlimited.co.uk) for a constantly updated list of job vacancies.



# Faith, fame and a fortune

Fast cars, huge houses, imported Japanese toilets – the videogame industry has certainly been kind to some. But how did the likes of Perry, Molyneux, Jones et al find their fortunes, and why don't they just retire so that they can enjoy them?

**V**ery few videogame programmers live in castles. And fewer still live in castles in Texas. But Richard Garriot, co-founder of Origin and writer of the massively successful *Ultima* adventures does. Garriot, a committed Anglophile and Dungeons and Dragons fanatic, had the gothic monstrosity built several years ago, complete with secret passageways and a replica Viking ship in the lake next door. Taste or no taste, the man is made of money.

He's not alone. The Stamper Brothers – of Rare fame – recently featured in *The Times* article on the 1,000 richest people in Britain. Fergus McGovern and the Darling Brothers were in there, too. And not to be outdone, comparative newcomer Demis Hassabis smiled happily from page 11 of *The Observer's* guide to millionaires under 30; he's 'valued' at £2m due to a lucrative publishing deal with Eidos. But there are quite a few personal fortunes in this industry that neither *The Times* nor *The Observer* will ever find out about.

The best bit, though, is where all this money goes. Dave Jones, founder of DMA, owns a veritable showroom of sportscars including four Porsches, a Lamborghini Diablo, a TVR Cervera, a Ford RS2000 Devolution, a BMW Alpina and a Nissan Skyline (something of a favourite among videogame designers – Peter Molyneux and Jez San are also owners). Ian Heatherington, ex-MD of Psygnosis, left the company a few years ago to pursue his first love: racing Ferraris. And Peter Molyneux's house contains more gadgets than a James Bond film (including aforementioned Japanese toilet which sports a remote-controlled squirter).

The question is, what did all these people do right? How did they manage to accrue such fortunes in this capricious

and notoriously dangerous industry? Well, getting in there early was a good idea. In the early '80s, games were developed in a matter of days rather than years, and the risks were comparatively low. As Steve Bailey pointed out on p4, you could put almost any old rubbish on the shelves and it would sell by the ton – plus, if you did create a *Pyjamarama* or a *Manic Miner* (and wrestled some financial control for yourself) you were pretty much set up.

Getting into the industry before, say, 1990 also meant that it was very cheap and easy to set up your own development company. All you needed

game design talent. On the other hand, the history of videogames is also littered with talented individuals who have failed to make the financial big league. Jeff Minter has backed a succession of lame platforms since the early '90s, and Andrew Braybrook (creator of legendary CBM64 title *Paradroid*) saw a succession of his publishers buckle and collapse, taking chunks of his career with them.

## Creative agenda

Creativity has always been a key factor, though. In Japan, the likes of Miyamoto and Kazunori Yamauchi have done very well for themselves by simply being

**Jeremy Smith** at Core certainly understands it: "When we published *Corporation* [Amiga version], we had to release it in August. If it didn't hit that month, then we would not receive any money and wouldn't be able to pay bills and salaries. The comradeship within the company at that time was incredible. We all worked for 36 hours straight, getting the game duplicated in Leeds, then having to work through the night packing it in a production line. Then at 6.00 am, after packing 20,000 units, one of our testers found a major bug, which meant we had to unpack all the games, reduplicate and repack. It was incredible.

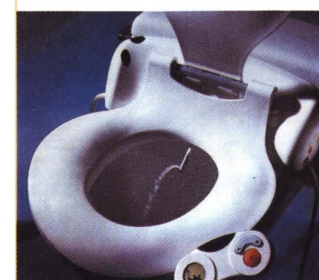
**"The most successful developers live very comfortable lives. But they still work night and day making new games because they love it!"** Dave Perry

was a couple of friends, a few target machines (be they CBM64s, Amigas or Amstrads) and a bedroom or attic – and, in the very early days, you didn't even need a publisher to distribute the games. Richard Garriot and Dave Perry, among others, sold their first titles via mail order, packaging them in plastic bags with photocopied instructions. Later, when using larger publishers was a necessity, owning a company still put you in a strong position. Molyneux, for example, wouldn't have made a fraction of the money he did from the *Populous* titles if he'd simply joined EA as a game designer and written it for them as a staff member – no, he owned Bullfrog, which had become a valuable commodity in its own right.

Business acumen is another important factor. Knowing what platforms to develop for and when to move on, and which publishers to join forces with and when to sell out to them, has put the likes of Molyneux, San and McGovern where they are today as much as their

brilliant: they just knew they had good games. And within creativity there often lurks obsession; an actual love affair with the videogame business. As **Demis Hassabis** says, "The most important thing that anyone looking to do well in this industry needs is a love of games. It takes at least two years of sweat and tears to make one, and if you don't really love what you're doing there's no way you'll be happy about the dedication and number of hours required."

It's this sort of passion that drives programmers to sleep in the office and work for days on end without rest.



I actually saw some of the guys standing at the production line fast asleep."

Strangely, this compulsion still seems to be present in *all* the figures **Edge** has mentioned in this article, they are all still in the industry, working long hours, attending the trade shows, developing new titles. In fact, they probably couldn't exist anywhere else. They are the techno-nouveau riche – millionaires who converse easier with the geeks they grew up with, than with the new neighbours they find in those exclusive Surrey villages. It's not just a job, it's a way of life.



**The spoils of videogame success: luxuries such as squirty toilets and imported Nissan Skylines**





This extends to the whole of the technology industry. Bill Gates only handed over close control of Microsoft last year, even though he could have retired a decade ago and lived comfortably for a thousand years. Deep down, Gates probably still feels like that 20-something Harvard drop-out, beaver away on an Altair computer in his garage.

## Child's play

Ultimately, videogame winners are very different from 'proper' business millionaires, they don't dine in Marco Pierre White's latest restaurant or try and work their way into the society pages of *Tatler*. They buy fast cars, go to glitzy casino bars in Las Vegas and socialise together – and they do this for the same reason they make such good games: because they are essentially still kids at heart. Their material ambitions – fast cars, big TVs, hi-tech gadgets – reflect this. **Dave Perry** sums it all up best: "The most successful developers live very comfortable lives. They can afford to do anything they want to, but they still work night and day making new games because they love it! Nearly every 'millionaire' I know started with nothing, worked 24/7, waved goodbye to their 20s and ended up successful with lots of cool toys!"

There are a few videogame dignitaries who have gone into more rooted lives, but even they can't resist the trappings of the geek made good. As Smith told **Edge**, "I think it's wrong to brag about material things the industry has allowed me to achieve, because for every success story there are many failures. To date, yes, the industry has been good to me, but I've worked bloody hard, and the key luxury has been financial security for my family – that's the greatest achievement that anybody wants. Of course, the odd Ferrari is nice..."



Richard and David Darling made a fortune out of budget software like the *Dizzy* series, then turned Codemasters into a classy next-gen developer.



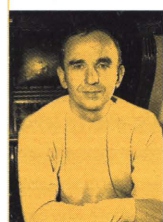
Dave Perry worked for various developers on dozens of games before setting up Shiny Entertainment, and making a fortune out of a worm.



DMA developed a couple of forgettable titles before *Lemmings* climbed up the charts and eased Dave Jones into a dozen sports cars.



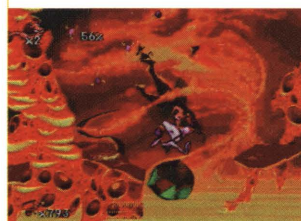
Not only did Jez Sanz' Argonaut create a bestselling SNES game in *Star Fox*, it also developed the chip which would allow carts to run it.



With *Populous*, Molyneux famously invented a whole new genre, and has been repackaging it in various imaginative ways ever since.



Richard Garriot was busy creating addictive adventure games while most other developers were still writing '10 Print "hi"' on their ZX81s.



## It could happen to you

Is it still possible to become a videogame 'millionaire'? Many industry pundits are cynical, as **Darren Falcus** points out, "Fewer people are now entering the industry and making a fortune, largely as a result of the market maturing and moving away from its former reliance on key talented individuals, and towards well-organised and better structured teams." Indeed, original concepts themselves are becoming less and less important as established franchises like *FIFA*, *Actua* and *Tomb Raider* continue to rake in the cash. Cash that, in the most part, doesn't filter down particularly freely to the development staff.

But there is money to be made – if not by individuals, then by small teams. Over the last two years, dozens of tiny groups have split off from larger publishers to set up their own studios and develop their own games. Toby Gard left Core and formed Confounding Factor, both Eighth Wonder and Free Radical Design left Rare, and both Mucky Foot and Lost Toys abandoned Bullfrog. It's a risky endeavour, but if their forthcoming products are successful, these teams will no doubt be much better off than if they had designed them in-house.

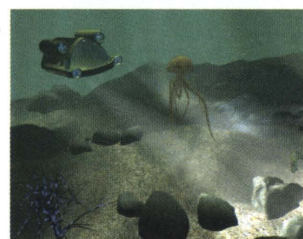
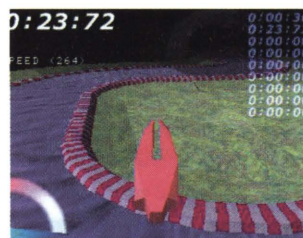
The recipe for success in the modern industry, then, is as follows: join an established developer, work on a couple of big hits and then leave, taking all the kudos of success with you. Mucky Foot, Pumpkin (ex-Microprose) and Ion Storm (ex-id) had no trouble setting up publishing deals with Eidos, and Wayward (ex-Psygnosis) is getting the development of its game funded by publisher Hasbro; there's always one company or another willing to invest in a group with proven money-making abilities – it's up to that group to bash out a deal which will give them financial clout.

But has the role of the individual, the über-designer really gone forever? Not quite. **Peter Molyneux** explains: "Few innovative and successful games have been designed by committee, but have been the brainchild of an individual. This is true of any creative endeavour." True, it may have taken 200 people to produce *Shenmue*, but it only took one to come up with the original idea. Ultimately, anyone who can produce two or three concepts like *Tetris*, *Populous*, *Wolfenstein*, *Tomb Raider* or *Command and Conquer*, and has a modicum of financial sense, is going to be extremely successful. The question is whether any similarly ground-breaking ideas remain to be discovered...



# Higher Learning

UK universities are finally taking videogames seriously. **Edge** looks at what the various courses have to offer and gets the best advice from prospective employers



Students' work from Middlesex University's BSc in Applied Computing. (From top to bottom) Robert Swan (Yaroze), Harvey Cotton, Jonathan Hall and Adam Robertson (all 3D Studio Max)

**A**s little as five years ago, the term 'videogame' was rarely uttered in a university computer science department. Gaming was a furtive after-hours pursuit, something students indulged in over the department LAN between writing reams of COBOL code for projects on business systems development. If you wanted to write videogames when you left uni, you certainly didn't mention it while you were there.

Recently, though, higher-education has woken up to the fact that there are long-term careers to be had in the videogames industry. Universities such as Derby, Huddersfield and Plymouth are increasingly opening their technology courses up to interactive entertainment elements, adding new modules in computer animation, object-orientated programming and game design. Meanwhile, a hardcore of enlightened establishments like Abertay and Teesside (which have been running videogame components for years) have begun launching exclusively game-based courses.

What has caused this interest? The simple answer is success. Over the last ten years the videogame industry has grown into a major – if not *the* major – entertainment field. In a report last year, accountancy firm Coopers and Lybrand wrote that it is, 'The fastest growing entertainment industry, with worldwide retail sales in excess of \$10 billion and growing at 35 per cent per annum'. Graduates naturally want to go into successful, growth industries – especially those heavily populated by young people and solely based around creating fun products. The PlayStation's role as a lifestyle accessory has infused the whole market with a kind of glamour usually associated with the film or music arenas – students want to get in on it, and universities want students. It's a clear-cut case of supply and demand.

## Links with the industry

Importantly, too, the courses **Edge** has looked at have not been thrown together by lecturers with little understanding of the subject. Abertay and Teesside have both constructed their degrees around industry comment and criticism, and they employ industry-experienced lecturers (Abertay has ex-DMA man Alastair Houston, while Teesside boasts Paul Waters – an artist at Criterion, and Chris Williams – an artist from Reflections). Peter Passmore at Middlesex, meanwhile, has been approached by several developers asking for work placement students and offering guest lectures.

The advantages of taking a specialist game programming course are clear. Not only do you get a sound basis in C (and software engineering in general) but you also get tuition in other facets of the industry like game design theory, 3D engine construction and console programming. The importance of group project work is also stressed, as **Matthew Horton** at Teesside points out, "Anyone working in a computer games company has to be prepared to work (and be managed) as part of a team. That's why group work, games project management and industry practice are integral parts of our courses." Often, the whole culture of videogame design is placed under the microscope – Abertay even runs a unit on Japanese language and society, preparing programmers who may wish to work for the likes of Sony, Sega and Nintendo, or who simply want to understand the mindset behind some of the world's finest games.

Importantly, universities also recognise that there's more to the industry than programming. Bournemouth's National Centre for Computer Animation has been running its MA courses in Computer Animation and Digital Entertainment Systems for a couple of years. Abertay, too, is getting in on the act with a forthcoming BA in Computer Arts, and Teesside is set to start a BA in Computer Animation to accompany its more



technical BSc in Visualisation. Teesside has also recently announced Britain's first dedicated game design degree which teaches the fundamentals of game structure and playability, but also provides a good introduction to animation and 3D modelling.

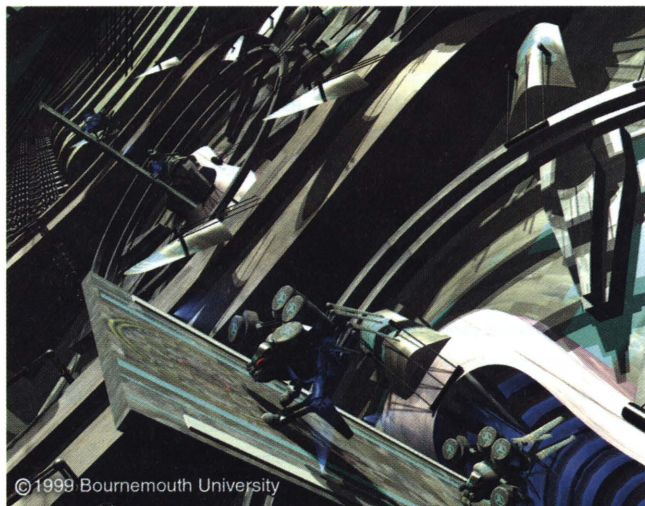
Interestingly, several new courses are mixing traditionally separate disciplines to give a broader set of technology skills. The BSc in Applied Computing at Middlesex, for example, includes a specialist graphics strand which allows students to take up to five courses in graphics, while Teesside's long-running Visualisation degree gives students a strong programming foundation as well as art training. Similarly, Plymouth's innovative BSc in MediaLab Arts is an arts/science hybrid which, according to the excellent course Website, 'Aims to produce critically informed new media practitioners'. Graduates are being prepared for Web design, TV and film as well as the games industry, but modules in graphics, animation, music, entertainment systems and C programming will all benefit potential designers, programmers and artists.

Although the presence of heavy programming elements within an art degree may put off many prospective videogame artists, these integrated courses do have advantages. As **Toby Gard** argues, "Most games are much poorer than they should be for the simple fact that artists consider what the programmers do to be none of their business, and vice versa. When programmers and artists are working together and understanding each other's needs, the team becomes unstoppable." Nowadays game development is all about cooperation, and those who can understand the whole process will be valued.

## Talent spotting

Elsewhere, industry opinion on videogame courses varies. Many developers are enthusiastic about any initiative which encourages new talent. **Darren Falcus** at Iguana tells **Edge**, "I think it's an excellent idea. This could well be a pool for development teams in the future." **Martin Edmonson** is planning on looking into the new courses as soon as *Driver* is finished: "We do find that standard computer science degrees, although providing a fairly broad base of knowledge, are not specific enough for this industry."





**Alien Worlds, currently in production at Bournemouth Uni, was created by MA students Simon Beaumont, Georg Finch, Neil Glosbery and Matt Huges**

Others have taken proactive steps already. Dave Perry has devoted a section of his Website to videogame education, and DMA's **Dave Jones** helped in the setting up of the videogame courses at Abertay. "You can learn a lot in a three- or four-year degree!" he argues. "The one we've been involved with at Abertay University has a lot of really good core material in it. It has a lab full of PlayStation development kits, all the latest PC gear, and a good environment given the enthusiasm of all the people on the course. As well as doing the degree material, the students tend to be motivated enough to try things out on their own, as they have access to the equipment at all times. All of this gives them a great grounding for when they start to write games commercially."

However, some are worried that degrees heavily aimed at getting people into the videogame industry may skip the mathematical and scientific fundamentals of a general computing or software engineering course. The lecturers themselves dispute this. "We thought about this when we designed the BSc Interactive Computer Entertainment degree," asserts **Matthew Holton** at Teesside. "The course includes a solid underpinning in mainstream computer science in terms of maths, programming and computer hardware. The whole programme is technically demanding, and graduates would be well-suited for mainstream programming." Computer science is actually a much more complex and diverse area than it was even ten years ago, so it's natural that students are finding that they have to specialise rather than take a general option.

## Move with the times

But there is also concern about the long-term validity of the course content. As **Peter Molyneux** argues, "We have to remember that this industry is in a constant state of innovation, and it's very hard to design a three-year degree course when the industry evolves into something different during that period." This may be true, but consider the alternatives. As **Michael Robbins**, a student at the University of Abertay points out: "From my experience of computer science at A-level, and from visiting various computing departments at other universities, there's too much emphasis on producing

programmers of systems and business applications software. Most computing academics like to pretend that games do not exist." But surely it's better to have a grounding in game programming that's a little out of date than a grounding in languages and methods that are totally irrelevant.

As for the student point of view, most feedback, again, has been positive. "The skills you learn here are much more than just how to knock out lines of code and draw pretty pictures. You really are prepared for almost any job," enthuses Robbins. Middlesex

**"The skills you learn here are much more than just how to knock out lines of code and draw pretty pictures. You really are prepared for almost any job"** *Michael Robbins, University of Abertay*

Applied Computing student **Jason Spreadborough** is equally positive, proclaiming that, "This is an excellent course for learning how to program the PlayStation." However, at the moment, there does seem to be more support for the courses which tack games components on to general computer science degrees, rather than offering 100 per cent specialist options. As **Olly Read**, a Middlesex graduate, surmises, "A wide-ranging background of general computer science is required to give students experience of other aspects of the computer games programming industry, as games are now developed using all sorts of different hardware and software applications. The emergence of online gaming and other future developments mean that game programming is really a specialised layer built on to general computing expertise."

## One step ahead

Whatever type of course you go for, though, simply being at university can be a great job-seeking tool. For a start, there's all the access to vital high-end hardware and software. Robert Swan, who took the Middlesex Applied Computing course, got his job at SCE before he graduated thanks to a Yaroze demo developed specifically for the course. Teesside Visualisation graduate Paul Scruby is now working for Bits Studios as a special effects programmer. He tells **Edge**, "During our graphics programming classes we were taught OpenGL on Silicon Graphics Workstations, which I found very similar to developing on the N64." The whole higher-education circuit is great for making contacts within the industry – another difficult endeavour for those attempting to break in from home. Almost every course **Edge** looked into provided the option of a year's industry placement, so students are given hands-on development experience, too.

Ultimately, the concept of a university education is gaining more respect within the videogame industry. As **Nick Cook** at Pumpkin explains, "The industry constantly needs 'new blood' to keep it vibrant and fresh. In my experience, the best place to find this has been with candidates with a good academic background. People need to be able to think on their feet, be good team players, be proactive and reactive. We need bright people who are good at finding solutions rather than creating problems! The college discipline helps to create individuals who are up to working in this demanding environment."

It's worth remembering, though, that there is no substitute for passion and enthusiasm. If you can't muster it before spending three years learning about C++, multimedia toolkits, behavioural modelling and genetic algorithms, you certainly won't be able to fake it afterwards.



**These images were conceived by current Abertay students Martin Staubli (top) and Andrew Dennison (above), as part of the university's BSc (hons) in Computer Games Technology**



# Edge directory

There has never been a better time to study the noble art of videogame development. Here **Edge** lists nine universities currently running relevant courses for both undergraduates and postgrads, and outlines the necessary entry requirements and contact details for each

## University of Abertay

<http://www.tay.ac.uk>

### MSc Computer Games Technology

Designed specifically for programming graduates who want to learn videogame skills. Concentrates on interactive 3D graphics, maths for 3D, and the process of professional game development. As well as personal projects in OpenGL and Yaroze programming, students work in teams to create a complete game. Also covers network programming and AI.

**Entry requirements:** Programming competency and a degree in computing.

### BSc Computer Games Technology

A software engineering degree tuned for games development. Includes C programming, Yaroze, game design, maths/physics for real-world modelling, Japanese language and culture, and a short introduction to 3D modelling.

**Entry requirements:** Three A-levels including maths or physics. Minimum grades B,B,C.

**Software/hardware:** PC, *Microsoft Visual Studio 6* (C++), Yaroze, various 3D engines and libraries.

### BA Computer Arts

Includes both audio and artistic sides of game/new media development. The computer-based course covers design, photography, video, animation, MIDI, audio programming and music theory. Starts October 1999.

**Entry requirements:** Three A-levels (B,B,C) including art, design or music.

**Software/hardware:** Mac G3, *3DS Max* (rendering and animation), and *Rhino3D* (modelling). The audio studio is equipped for MIDI programming and uses *Cubase* and *Sound Forge* software.

**Contact:** John Sutherland, 01382 308600, [j.sutherland@tay.ac.uk](mailto:j.sutherland@tay.ac.uk)

## Bournemouth University – National Centre for Computer Animation

<http://ncca.bournemouth.ac.uk/main/>

### BA Digital Entertainment Systems

Begins with an introduction to computer graphics systems, visual research and programming. Goes on to include computer graphics programming techniques, computer visualisation and animation, moving image theory, professional practice and audio, video and post-production techniques. Includes group and individual projects. Strong industry links maintained throughout the course, including visits to companies and specialist lectures.

**Entry requirements:** Strong art skills, good technical understanding, art A-level and preferably Art Foundation.

### MA/MSc Digital Ent. Systems

Covers programming concepts for computer graphics, computer graphics techniques, moving image theory, production techniques, business practice and digital entertainment tool sets. Includes a computer animation project. (The MA concentrates on creative design. The MSc concentrates on programming and mathematics with a design basis.)

**Entry requirements:** A good Hons degree or equivalent in art, design, media, animation or similar.

**Software/hardware:** Networked PC NT and SGI workstations. *3DS Max*, *Softimage*, *Maya*, *OpenGL*, *Yaroze*, *DirectX*, *Renderman*, *Houdini*, *Quake II* and *Unreal* editors.

**Other Courses:** NCCA also runs MA/MSc courses in Computer Animation and Digital Special Effects.

**Contact:** Mr A Sarafopoulos, 01202 595631, [asarafop@bournemouth.ac.uk](mailto:asarafop@bournemouth.ac.uk)

## Bradford University

<http://www.brad.ac.uk>

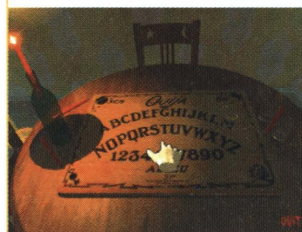
### BSc Interactive Systems and Videogame Design

"Students interested in game design and development have two choices," says **Dr Ian Palmer**. "They can do the BSc in Electric Imaging and Media Communications and choose Interactive Systems and Videogame Design as a final year option (this will only take up a sixth of their final year studies), or, from Sept '99 they can register for the full BSc in Interactive Systems and Videogame Design." Either way, the first two years are similar for both, covering graphic design, software engineering, computer graphics, animation, and soundscapes. The full Videogame course then goes on to cover game design, AI, 3D modelling, interactivity, plot and character.

**Entry requirements:** Typical offer to A-level candidates varies between B,B,B and B,C,C. Advanced GNVQ students who achieve a distinction or merit may be offered a place if they have an A-level in a relevant subject.

**Software/hardware:** NT PC, Mac G3, *MultiGen Creator/GameGen*, *Lightwave3D*, *CodeWarrior*, *Director*, *Photoshop*, *CorelDraw*.

**Contact:** Direct questions to Dr Palmer (01274 234035, [i.j.palmer@brad.ac.uk](mailto:i.j.palmer@brad.ac.uk)). For an info pack try Paula Dale ([p.e.dale@brad.ac.uk](mailto:p.e.dale@brad.ac.uk), 01274 234011).



By Wes Elliot – a final year student on the Videogame Design course

## University of Huddersfield

<http://www.hud.ac.uk>

### BA/BSc Multimedia and Virtual Reality Design

This is a collection of four courses allowing students to take either a BA or BSc in Multimedia Design or a BA/BSc in Virtual Reality Design (concentrating on immersive technologies – datagloves HMDs, etc). However, all the courses share the same first year, allowing students to experience various elements of interactive entertainment, design and programming before choosing their preferred pathway. None are strictly dedicated to videogaming: units include interface and interaction design, multimedia authoring, C, C++, Java, HTML, VRML, VR and 3D graphics, storyboarding, animation, sound and video, virtual environments (games and VR case studies). Graduates, then, are destined for any career that involves computer graphics and/or programming, inc., Web design, human/computer interface design, digital effects, architecture and, of course, videogame programming and art. Masterclasses and guest lectures by leading producers are featured through links with Huddersfield's Media Centre, the Digital Research facility TEST, and the Yorkshire HUB.

**Software/hardware:** PC NT, Mac G3, *3DS Max*, *CodeWarrior*, *Photoshop*, *Freehand*, *World Toolkit* and others.

**Entry requirements:** A broad range of academic qualifications and/or relevant skills or experience, Foundation course in Art and Design or decent school qualifications. Will take mature students with appropriate attitude, experience and commitment.

**Contact:** Derek Hales, 01484 472064, [d.hales@hud.ac.uk](mailto:d.hales@hud.ac.uk)

## University of Middlesex

<http://www.cs.mdx.ac.uk>

### BSc Applied Computing

After the initial year, which introduces students to computer programming and mathematical methods (support is provided for those who have no experience in these areas), you get to choose from three specialist options: Human Computer Interaction, Graphics or Multimedia Programming. The latter is perhaps the most relevant – students get an introduction to computer graphics and then go on to study programming for interactive graphical systems (collision detection, AI, etc), image processing and rasterisation, 3D modelling, lighting, texturing, character animation and 'modelling of natural phenomena'. There are plans to convert Applied Computing into a new Software Engineering degree for September 2000, but the details have yet to be confirmed.

**Entry requirements:** Maths and English GCSE, 'an ability to solve problems using basic mathematical techniques,' two A-levels (or equivalent) in relevant subjects at 'reasonable grades'.

**Software/hardware:** PC, Yaroze, Turbo C++, Microsoft Visual C++, *DirectX*, *3DS Max*, *Java*, *Director*.

**Contact:** Admissions Enquiries, 0181 362 5555. Or contact Dr Peter Passmore on 0181 362 6428, [p.passmore@mdx.ac.uk](mailto:p.passmore@mdx.ac.uk)



A Yaroze game created by Robert Swan, who's now working at SCE



### University of Plymouth

<http://www.tech.plym.ac.uk/soc/mla/>

#### BSc MediaLab Arts

A hybrid arts/science programme where students, 'engage in a wide range of creative and technological activities that enable them to develop and design dynamic interactive multimedia for CD-ROM, DVD, WWW and Digital TV'. The first semester introduces students to the theory and practice of multimedia, after which they go on to study, among other subjects, digital design and application, multimedia production, AI and human computer interaction – as well as taking part in various multimedia workshops (focusing on 2D/3D design, animation, Java, VRML, etc). In the final year, students tailor the course to their own career goals: neural computation, multimedia entertainment systems, programming for entertainment systems and VR are among the units on offer.

**Entry requirements:** 18 points at A-level in arts and science subjects, or at least two distinctions at BTEC, Art and Design Foundation, GNVQ.

**Software/hardware:** Networked NT PCs, Mac G3s, Yaroze, *Photoshop*, *Director*, *Dreamweaver*, *Cubase VST*, *3DS Max*, VRML, various map editors.

**Contact:** Dan Livingstone, email [danl@soc.plym.ac.uk](mailto:danl@soc.plym.ac.uk) – use 'mlanewbie' in the subject header. For general info phone 01752 232542.



Work by MediaLab Arts graduate Joe Nash, now employed at AtticMedia

### University of Teesside

<http://www.tees.ac.uk>

#### BSc (Hons) Interactive Computer Entertainment

A technical course with elements of 3D maths, 3D engine construction, computer graphics algorithms, games tools production, games algorithms (including AI, evolution, etc) and online games programming. There are also modules dedicated to games industry practice and project management.

**Software/hardware:** Silicon Graphics workstations, NT PCs, and Linux machines, C, C++, Assembler and Visual Basic, OpenGL, *DirectX*, *Direct 3D*. Final year, possibly specific console dev kits.

**Entry requirements:** 16-20 A-level points.

#### BA (Hons) Computer Games Design

Aimed at potential game artists and/or designers. A strong central theme of art, design and animation, starting from traditional principles. Games-specific subjects include animation for games, games design, 3D modelling, interface design, image manipulation (textures, etc). There are also modules dedicated to games industry history and practice.

**Software/hardware:** Silicon Graphics and NT, *Softimage*, *Maya*, some *3DS Max* and *Photoshop*, plus access to design studio digital video editing facilities and TV studio.

**Entry requirements:** 16-20 A-level points in arts-based subjects.

**Other courses:** BA/MA in Computer Animation, BSc in Visualisation (graphics course with a programming bias), BA in Creative Visualisation and HNDs in Computing and Visualisation.

**Contact:** Matthew Holton, 01642 342600, [m.holton@tees.ac.uk](mailto:m.holton@tees.ac.uk). Admissions 01642 342659.

### University of Derby

<http://www.derby.ac.uk>

#### BSc (Hons) Computer Studies (Visualisation)

A more 'traditional' computer science degree, taking in programming design, systems analysis and introductory computer technology in the first year, before moving on to subjects such as image processing, graphics, and object-orientated design. The third year is an industrial placement and the fourth is a graphics thesis/project. Students have access to Yaroze units, and there are rumours Derby may be starting a more videogame-centric course next year.

**Entry requirements:** Two A-levels or four AS-levels, plus three supporting GCSE passes. BTEC and GNVQ qualifications considered.

**Contact:** Derby University on 01332 622222.

### University of Humberside

<http://www.humber.ac.uk>

#### BSc (Hons) Computing (Games, Simulation and Virtual Reality)

Combines technical modules such as data structures, computer systems architecture, algorithms, software engineering, VRML and mathematics in computing with videogame-specific components such as game design, graphical modelling, simulation and animation. The course ends with a computing group project which aims to simulate the experience of working in professional software development.

**Entry requirements:** Three A-levels (or A-levels, relevant AS-levels, and GCSEs). BTEC, HND and GNVQ qualifications also considered with relevant GCSEs.

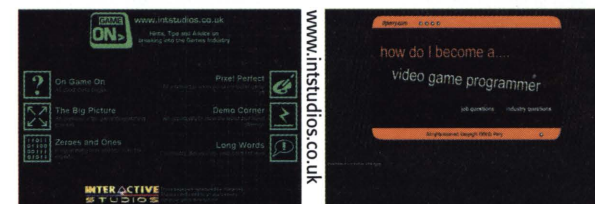
**Contact:** 01482 440550 (ask for Faculty of Art and Technology).

## Education online

The Internet provides a wealth of resources for those wishing to gain videogame development skills. Such is the need for new talent that companies are now setting up help pages on the Web to guide newcomers into the industry. Here are the two key examples:

**www.dperry.com** A beautifully presented site put together by Shiny Entertainment and overseen by the gaming legend himself. The site includes tips on how to get into programming, design, music and 3D modelling/animation and also contains an informative guide to the way the industry works.

**www.intstudios.co.uk** Interactive Studios has engineered this well-constructed guide to getting into the videogame industry, which includes programming hints and tips (plus links to resources on the Web), a demo corner for people to post their own creations, and a section on 2D/3D art. The company plans to add a list of recommended books and courses, as well as sample code and graphics soon.



## Sandwich courses

The option of taking a year out of your study programme to complete an industrial work placement with a developer can be very rewarding. Not only can you pick up new skills and gain a specialist insight into a particular job, you gain invaluable experience which may just prove crucial when applying for jobs after graduation. There's also the possibility of being offered a full-time position after your work placement, which is about the best leg-up into the industry that anyone could ever hope for.

Of the colleges **Edge** spoke to, the following offer the option of an industrial placement, although it's worth contacting course administrators to discuss this prior to application:

- University of Abertay
- University of Plymouth
- Bradford University
- University of Teesside
- University of Huddersfield
- University of Humberside



# Going underground

As soon as the first home computers were unpacked by eager maths-bright kids 20 years ago, there was an illegitimate underclass of home coders, hackers and crackers. How has the videogame industry responded? By threatening them? No, by offering them jobs

Gone, but not forgotten



**Although Sony has stopped selling its ground-breaking Net Yaroze machine, it is still supporting current owners and universities**

Sony has recently stopped selling its Yaroze programmable PlayStation in the UK, bringing to an end one of the company's most interesting endeavours. Since its British launch in 1997, the Yaroze machine has provided a great way for home coders to experience console development, and many have gone on to find jobs in the industry.

All is not lost however, several universities own Yaroze machines which are available to computer science students. Furthermore, technical support for current members is still operating, as is the Net Yaroze Website (see <http://www.scee.sony.co.uk/yarinfo/index.html>) which provides information on the universities and colleges that use Yaroze machines.

Whether or not a similar piece of kit will appear for the PlayStation sequel is unconfirmed. However, **Nick Slaven** – a finalist in **Edge's** Game Design UK competition (see **E55**) – reckons, "The next generation of consoles may interface quite well with a PC (the PlayStation 2 has a USB port), so a specialised version of the console may not be needed." Could Sony's forthcoming follow-up be even more open to amateur coders? Watch this space.

## Europe: demo continent

**Edge** recently visited Swedish developer Digital Illusions, currently putting the finishing touches to its promising PlayStation title, *Rally Masters*. A racing game. For a Sony console. You can't get much more mainstream than that. A few years ago, however, the people behind the game were part of the Amiga demo coding subculture – a thriving underworld of programmers distributing flashy audio visual demonstrations of their technical abilities via the WWW, bulletin boards and public domain software libraries.

It was, perhaps, with Commodore 64 software piracy that the scene really began, though. During the '80s, as videogame production became more sophisticated, pirate coders had to use more complex methods to crack software protection and copy games. Loathed to let such efforts go unappreciated, they began to attach mini-demos to the beginning of pirated

visually stunning and ingenious demos, pushing the machines to their limits. The Amiga, though, became the platform of choice, and the place where most of the best work was being created. Classic examples, including *StateOfTheArt* by SpaceBalls (silhouetted women rotoscope dance in front of psychedelic backgrounds) and *Jesus on Es* by LSD (25 minutes of sampled music accompanying mad strobe effects), are still talked about today, and are easily available via archive sites on the Web.

The very fact these coders were pushing the machines in new directions meant that they made great game programmers. German outfit HouseMarque, responsible for classic Amiga shoot 'em ups *Stardust* and *Super Stardust*, came up from the demo scene, as did Digital Illusions, and most of the Scandinavian coders who joined technically lauded Saturn developer Scavenger. When Scavenger fell apart

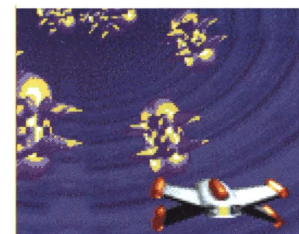
in 1997, Shiny Entertainment snapped up most of the original Amiga coders – who are now no doubt contributing to the revolutionary excesses of *Messiah*.

The scene is still huge. Although many talented groups like Purple, Fudge and Finnish collective Pulse have moved on to the PC, an Amiga contingent remains, and inter-platform bickering has given way to an incredibly sociable scene. As **Alex Evans**, a leading UK demo coder recently employed by Lionhead, states, "The main fun and core of the demo scene revolves around the many parties, which often attract thousands of people and big sponsorship. The big ones – Assembly (Finland), Gathering (Denmark), Mekka (Germany), Wired (Belgium) and Takeover (Holland) – are held annually. Everyone meets up, gets drunk, releases lots of demos, music and artwork (in competitions) and generally has a good time – that's still the life and soul of the scene."

**"The demo community is so rich with incredible visualisations, anyone not being inspired by some of the demos around is sticking their head in the sand"** **Peter Molyneux**

titles – initially no more than an animated 'hacked by X' tagline. As these demos became more sophisticated, though, they attained kudos in their own right, and hackers began to work on increasingly elaborate demos – often circulated via CompuNet, a precursor to the Internet.

With the introduction of the technically superior 16bit computers in 1985, however, the scene exploded – especially in continental Europe. Throughout the late '80s and early '90s, competition between ST and Amiga demoists led to the formation of dozens of demo collectives – groups of artists, coders and musicians who put together



**The classic Amiga shoot 'em up Stardust was written by ex-demo-coder outfit, Housemarque**

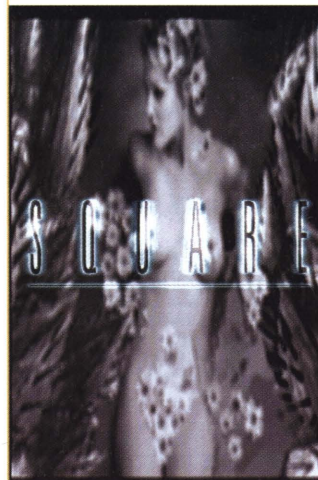
As for current demo work, although many PC demos have become '3D Shows' – fast 3D engines put together to support graphics accelerators and *D3D* – the spirit of innovation remains intact. Groups such as Pulse, Purple and Tpolm are becoming more influenced by TV advertising, and commercial design groups like Designers Republic and Tomato (Underworld). They create intelligent multimedia demos, mixing and merging everything from music and photos to true 3D environments.

Importantly, the whole scene is still receiving attention from mainstream developers. Peter Molyneux recently invited demo coders to come up with spell effects for *Black and White*, and tells **Edge**, "The demo community is so rich with incredible visualisations and techniques, anyone not being inspired by some of the better demos around is sticking their head in the sand."

**Demis Hassabis** sees the scene as, "A great way to learn the trade." Judging by the quality of works such as Pulse's *Square* and *Sunflowers*, he has a point.

## America: Quake country

In the US, which is too large a country for the same sort of community spirit to develop, things have taken a different course – partly thanks to a Texan codeshop named id. As in Europe, American hackers have always cracked away at games, altering them, pirating



**Coder Alex Evans (aka 'Statix') wrote the Square demo (main) for Pulse. The psychedelic StateOfTheArt (right) by SpaceBalls is an Amiga classic**





redistributing them through illegitimate channels. But, in 1993, the scene was blown open by *Doom*, as **Dave 'Fargo' Kosak**, creative director at **planetquake.com**, points out, "A big part of it was the nature of the game – it was the first multiplayer game of its type, so it had a *lot* of people playing it and playing together, and it handled custom-made maps and such without any problems. But the single biggest factor that made *Doom* into such a community was probably the rise of the Internet. People on IRC or UseNet would all trade files via ftp, so if you did something exciting, it would get around. And all the tools could proliferate worldwide, and you literally had a global community of people available to help you figure out how to tinker with it."

So people started playing around with the game, simple things at first, like changing the weapons, modifying the character models, etc, and posting the results on burgeoning dedicated sites. It caught on to this trend quickly, realising that the buzz *Doom* was creating online was fantastic publicity. Consequently, when *Quake* was released three years

later, it came complete with its own built-in editing language, *Quake C*. "Everything but the core engine was open," enthuses Kosak. "It was a hacker's dream. *Quake* was totally easy to modify, and, again, part of its success was tied into the changing Internet – the Web was the new medium, it was accessible to more people than ever before. A giant community began coding and tweaking and prodding the game... It was really fun to be a part of that."

The *Quake* hacking scene is huge on the Internet. People aren't just distributing weapons and character models, they're building whole levels and new multiplayer modes. Hackability has become an integral part of the firstperson shooter. *Unreal* came with its own map editor, and *Half-Life*, currently the hot property on the mod scene, is as easy to crack into as *Quake*. Such is the size of the scene, professionally run Websites like PlanetQuake have emerged to provide gamers with a one-stop shop for all their modification needs. Map editing software, demo levels, character models, and new multiplayer patches are easily available.

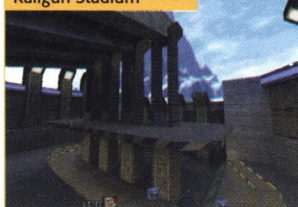
Sunbaked



Blood on the Rooftops



Railgun Stadium



The Bridge



Mod levels from *Rocket Arena 2* by a team of mappers led by coder David 'crt' Wright (top), and by Mr White of *Quake* clan, 'Loki's Minions' (above)



As Kosak eloquently puts it, "Sites like PlanetQuake or PlanetHalfLife are like giant incubators – they offer free Web hosting and promotion so that if someone takes the time to code something, they can get the word out to the gaming community. We have features like the 'Mod of the week' to help people get seen, which is great."

Most importantly, though, this is a two-way experience. Just as the mod coders feed off commercial game releases, so the games industry feeds off the mod circuit. "Developers see the gaming community as the breeding ground for new talent," adds Kosak. "Want a job? Show them all the cool levels or coding you did for one of the popular games out there. There are more success stories than I can count. Much of the team who built *Half-Life* were brought on board because of the work they did with the *Quake I* engine as part of the online community. Dave 'Zoid' Kirsch was hired by id Software for contract work after he made the awesome *Capture the Flag* mod for *Quake I*. David 'crt' Wright, who programmed *Rocket Arena* for *Quake I* and *Rocket Arena 2* for *Quake II* is now a programmer at GameSpy."

## Think different

Interestingly, although these two areas of underground coding share similarities – the use of the Internet, the wealth of new ideas, etc – they engender completely different skills – all of which are respected by the developers. As

**Dave Perry** points out, "Demo coders solve problems by coming up with amazingly fresh and unique solutions. Then they sleep under their desk until it works. This passion and ability to 'think differently', to innovate and not replicate, gives them a unique position in the programming world. Patch coders and hackers are best for conversions... They usually improve the original game during their normal day's work because they can grasp the code layout so quickly and spot mistakes and bottlenecks. A *very* useful ability."

Whatever the case, both the demo and mod scenes have a wealth of sites where coders share information and provide examples of classic work to download. As coming up with your own demo is an essential element of getting a job as an artist or designer, as well as a programmer, gaining a good understanding of both scenes could be a smart opening move.

## Underground Links



**PlanetQuake** is a passionate and professionally produced site dedicated to *Quake* modification. Look here for links to map editors

### Demo information

For the best of the current PC demo scene check out *Tribes* or *Square* by Pulse, *Kkowboy* by Purple, and *Clone Vs Clone* by Fudge. Classics include *Second Reality* by Future Crew and *Mr Black* by Orange.

<http://www.hornet.org> Although this has now officially closed down, you can still use it to find and download demos.

<http://www.scene.org> A well-presented general demo scene site.

<http://jerware.org/fanclub/> US-based Demo site with lots to download.

<http://ban.joh.cam.ac.uk/~alex/index.html> Alex Evans' home site from where you can download a selection of his award-winning demos.

### MOD information

<http://www.planetquake.com> A massive site with all the info you need to get into *Quake/Quake II* modification. (Also see [www.lokisminions.com](http://www.lokisminions.com))

<http://www.planethalfife.com> Burgeoning version of the above site for Valve's awesome shoot 'em up.

<http://gamedesign.net> A more general level design and modification site, professionally put together with hundreds of tutorials for you to try.

### Quake level editors

*WorldCraft* <http://www.worldcraft.com>  
*Qoole* <http://www.qoole.com>  
*Quest* <http://frag.com/quest/>  
*QERadiant* <http://www.planetquake.com/qeradiant>



# The new recruits

You've got a CV, a portfolio, and a couple of demo discs, but with so many devcos to choose from, where do you go from here? **Edge** discovers how specialised employment agencies can help you find work to suit your experience

## How the system works

Initially, agencies seek to establish relationships with developers and publishers, finding out what positions they seek to fill on a regular basis, and then providing a list of suitable clients. If the developer is interested in any of these CVs they arrange interviews through the agent – if one of the applicants is taken on, the agency charges the employer a commission; usually around 10-15 per cent of the starting salary. The applicant pays nothing. It sounds like an effortlessly profitable endeavour, but things are not quite so clear-cut. Most developers are in contact with several agencies at once (striking up an exclusive deal is apparently rare), and at the same time, few prospective employees send their details to just one agency – which explains the competitive, cut-throat reputation of the business; everyone an agent deals with is simultaneously dealing with all their competitors.

Most agencies should be initially approached via phone, but be aware that the service isn't suitable for complete novices. As **Answers' Lis Welsh** explains, "Most vacancies require experience, the more skills an applicant can demonstrate, the more likely they are to secure a position." She goes on to point out that most employers prefer a university education, at degree, MSc and/or PhD level, and that the right attitude is vital: "A desirable profile is a 'can do', teamplayer with a passion for games, no egotists."

**T**here are few greater signs of the videogame industry's maturity than the proliferation of employment agencies dedicated to finding people jobs within it. A quick glance at any issue of **Edge** will reveal several adverts promising lucrative and fulfilling positions in key development companies. It's a profitable business: **Elan Recruiting**, which deals in all areas of the IT sector, reported a turnover of £100 million last year, and maintains that the videogame division is making up a growing proportion of this profit. The business is obviously good for the agents, but how good is it for the clients?

## Professional help

General opinion seems to be that agencies provide a useful service – which is getting better. A few years ago, they would simply flood developers with CVs, with little regard for the specific needs of either the potential employer or potential employee – often leaving both disappointed in the process. With increased competition between agencies and a more organised, discerning industry, however, they can't get away

with that anymore. **Lis Welsh**, managing director at **Answers Recruitment**, points out, "Clients are demanding a more thorough service; receiving 'qualified' applicants that have been carefully screened before being presented."

At the same time, agencies are also providing employees with a better service. "A good company will take time to understand each candidate's needs and not pressurise them into accepting jobs they don't want," asserts **Datascope MD Julian Hofer**. Welsh agrees: "A good recruiter needs to listen and empathise with applicants, to understand their aspirations. An in-depth knowledge of the industry is also required to discuss specific positions and inspire confidence."

Given the new caring, sharing regime, there are plenty of reasons for you to use agencies to get into the industry. Most obviously, when you send an agent one CV, they'll circulate it to several companies, cutting down on your own expenses. They'll also get the CVs to the correct people, which is difficult for the uninitiated. Furthermore, some developers offer their jobs solely through agencies, so by using them you'll have access to more opportunities – at no extra cost to yourself.

But what do developers actually think about agencies? Most of the companies **Edge** spoke to use them to find staff, and can see the benefits for employees. **Graham Davis** at **Wayward**



**Reflections** – developer of *Driver* (above) – gives first priority to any candidates who apply to the company direct, rather than through agencies

states, "Employment agencies are invaluable, they are the place that programmers, artists and designers go to when they want a new job." Others are keen to point out that agencies are not the only option. As **Phil Oliver** (*Interactive Studios*) opines, "We use agencies, but, personally, I don't see why individuals don't at least write directly to companies they know they'd like to work for. It's faster, easier and you can be sure you are presented the way you want to be presented." It's a point of view also shared by **Martin Edmonson** at **Reflections**: "Employment agencies often tell candidates that there is little point in applying directly to developers because they cover all the major companies. But, believe me, anyone who applies directly to us goes straight to the top of the pile. It demonstrates that they have made some effort to approach the company they are particularly interested in."

## Choose carefully

However, for those without a definite studio in mind, and a need to find employment quickly, agencies are a very

good start – as long as you go to the right ones. The companies **Edge** spoke to all warned about unscrupulous outfits that advertise non-existent jobs merely to get clients on their lists (agency ads never give the full details of the jobs they advertise – obviously to prevent potential clients approaching the developer direct – which can allow them to be economical with the truth). Some will also pressure you into attending interviews for jobs or companies you don't want. Welsh also warns, "Guard against companies who want no more than your CV faxed in quickly in order for them to immediately broadcast it to half the industry without your knowledge." When you approach an agency, then, take some time to discuss their methods, and make sure they know exactly what you do and don't want.

Oh, and research the developer, too. A vaguely described, 'Top programming job in the Midlands, 22K a year,' may sound enticing – until you discover it's a company that specialises in multimedia fishing titles and is on the brink of receivership...



**Glover** creator **Interactive Studios** recruits from employment agencies



EDGE



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